USDA United States Department of Agriculture

In cooperation with the University of Florida, Institute of Food and

Soil Survey of

How to Use This Soil Survey

General Soil Map

The general soil map, which is the color map preceding the detailed soil maps, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

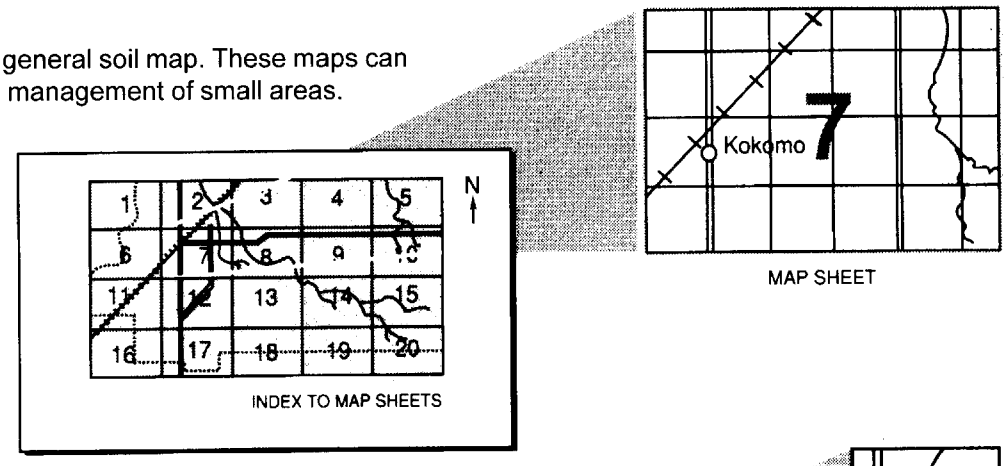
Detailed Soil Maps

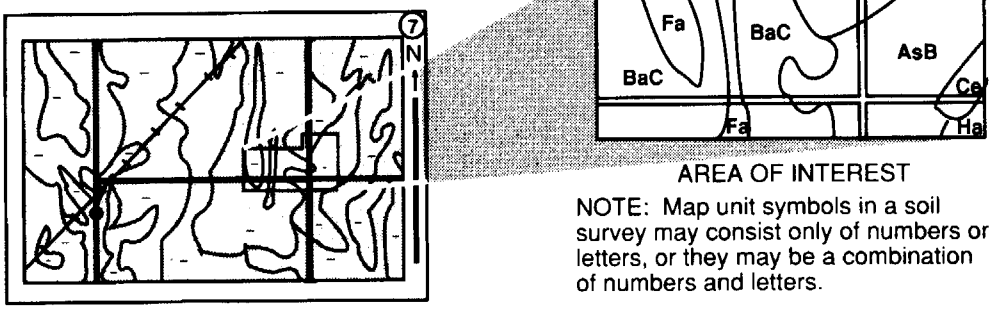
The detailed soil maps follow the general soil map. These maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**, which precedes the soil maps. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map units symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Summary of Tables** shows which table has data on a specific land use for each detailed soil map unit. See **Contents** for sections of this publication that may address your specific needs.





NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1991. Soil names and descriptions were approved in 1992. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1992. This survey was made cooperatively by the Natural Resources Conservation Service and the University of Florida's Institute of Food and Agricultural Sciences, Agricultural Experiment Stations, and Soil and Water Science Department; the Florida Department of Agricultural and Consumer Services; the Florida Department of Transportation; and the Lafayette County Board of Commissioners. The survey is part of the technical assistance furnished to the Lafayette County Soil and Water Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these [redacted]

maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

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Issued 1998

Summary of Tables

Foreword

This soil survey contains information that affects land use planning in Lafayette County. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations that affect various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

T. Niles Glasgow
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Lafayette County, Florida

By Robert L. Weatherspoon, Keith Anderson, William Anzalone, Richard Bednarek, John Chibirka, Eddie Cummings, Rodney Dahl, Charlie French, Dale Jakel, William R. Johnson, Richard W. Neilson, and Dan Shurtliff, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the University of Florida, Institute of Food and Agricultural Sciences, Agricultural Experiment Stations, and Soil and Water Science Department, and the Florida Department of Agricultural and Consumer Services

LAFAYETTE COUNTY is in the north-central part of Florida (fig. 1). It is more than 30 miles long and extends from the Madison County line to the Dixie County line. At its widest point, which is between the Suwannee River and Taylor County, the county is about 29 miles wide. Lafayette County is bounded on the west and southwest by Taylor County and on the south by Dixie County. The Suwannee River, made famous by Stephen Foster's song, separates Lafayette County from Suwannee and Gilchrist Counties to the east.

The total area of Lafayette County is about 348,928 acres, or about 545 square miles. The county seat is Mayo, which is located in the north-central part of the county.

In 1990 the population of Lafayette County was about 5,578, which represents an increase of 38 percent since 1980. During the same period, the population of Mayo increased about 3 percent to a total of 917. The housing developments and apartments within the city limits attract both townspeople and newcomers to the area.

Agriculture, forestry, timber, and dairy operations are the principal sources of income in Lafayette County, and many related enterprises support these industries.

Only the Eunola soils in Lafayette County meet all of the requirements for prime farmland soils, as defined by the U.S. Department of Agriculture. The other soils are either too wet as a result of the seasonal high water table or flooding or are too droughty during the growing season.

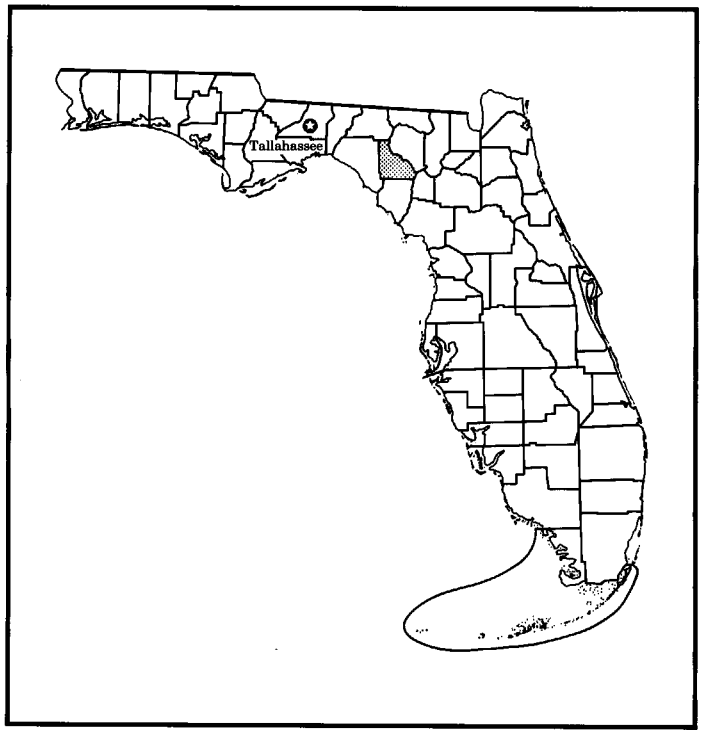


Figure 1.—Location of Lafayette County in Florida.

General Nature of the County

This section provides general information about the county. It describes the history and development; climate;

geomorphology, geology, and hydrogeology; mineral and energy resources; farming; recreation; and transportation.

History and Development

Lafayette County was created by an act of the General Assembly of Florida on December 23, 1856. The act created Lafayette and Taylor Counties out of part of Madison County, which was formed from part of Jackson County in 1827. The county was established eleven years after Florida was admitted into the union, and it was named in honor of Marquis de Lafayette.

Florida was occupied by three major group of Indians. The Calosa were in the southwestern part of the state, the Apalachees were west of the Aucilla River, and the Timicuas lived in an area that included present-day Lafayette County. The first European known to come into the survey area was the Spanish explorer, Navarez, who crossed the Suwannee River near present-day Old Town about May 17, 1528.

By 1650, the Spanish had established many missions between St. Augustine and Tallahassee. In April 1818, General Andrew Jackson successfully led two thousand Tennessee Volunteers and American Regulars and a large group of Creek Indians through the survey area to drive out the Seminole Indians on the Spanish-Florida border. Afterwards, settlers from Georgia, Alabama, and the Carolinas began migrating into the area. In 1860, the census reported 2,068 people in Lafayette County.

Most residents during this time were farmers or laborers. The crops that were grown in the area included cotton, corn, oats, rye, rice, sugarcane, and potatoes.

In the early 1900's, Lafayette County reached a peak population of almost 7,000 people, and new steel bridges spanned the Suwannee River at Brandford and Luraville. In 1921, the southern part of Lafayette County was lost when Dixie County was created.

Lafayette County currently has a population of 5,578 and a total area of 545 square miles, or 348,928 acres. Agriculture is still an important part of the economy. The county contains about 95,847 acres of cropland, which yields a gross income of $32,910, and 286,790 acres of woodland, which yields a gross income of $28,477,000. The main agricultural industries include dairy, beef, swine, and poultry operations; the production of field crops; and woodland operations. The main field crops include tobacco, watermelons, corn, peanuts, soybeans, peas, wheat, oats, and sorghum.

The major employers include Mayo Correctional, the Lafayette County School District, Lafayette County, FRP Industries, Central Florida Lands and Timber, Lafayette Forest Products, Gillman Paper Company, Croft's Thriftway, and J&J Gas Company.

Climate

Lafayette County has a moderate climate that is favorable for the production of crops, livestock, and pine forests. Summers are long, hot, and humid. Winters, although punctuated by periodic invasions of cool to occasionally cold air from the north, are generally mild because the county is located at a southern latitude and is only a short distance from the relatively warm Gulf of Mexico.

Table 1 gives data on temperature and precipitation for the survey area as recorded in the period 1957 to 1987. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

The mean annual precipitation in Lafayette County is 50.46 inches, based on data from nearby Perry, Florida. October and November are the driest months. About 60 percent of the annual precipitation falls from April through September. About once every 10 years, however, excessive rainfall during the spring causes rivers to overflow their banks. Heavy summer thundershowers can produce 2 or 3 inches of rainfall in 1 or 2 hours. Day-long rains during the summer are rare. They are generally associated with tropical storms. The average relative humidity is about 75 percent.

Hail falls occasionally during thundershowers, but the hailstones are generally small in size and seldom cause much damage. Snow is very rare, and it generally melts as it hits the ground.

Tropical storms can strike the area any time from early June through November. Hurricane-force winds rarely develop because of the inland location of the county. The winds and rain associated with the tropical storms can cause timber and crop damage and local flooding.

Extended dry periods can occur any time during the year, but they are most common in the spring and fall. These dry periods can adversely affect the growth of plants and crops. The high temperatures in summer can also affect plants during dry periods because of the increased evaporation rate.

Tornadoes occasionally accompany heavy thunderstorms or tropical storms. They generally cause limited damage in local areas.

Geomorphology, Geology, and Hydrogeology

Jonathan D. Arthur, Florida Geological Survey, prepared this section.

Geomorphology

Lafayette County lies within both the Northern and Central geomorphic zones, according to White *(28)*. The Northern Zone is described as broad highlands that run

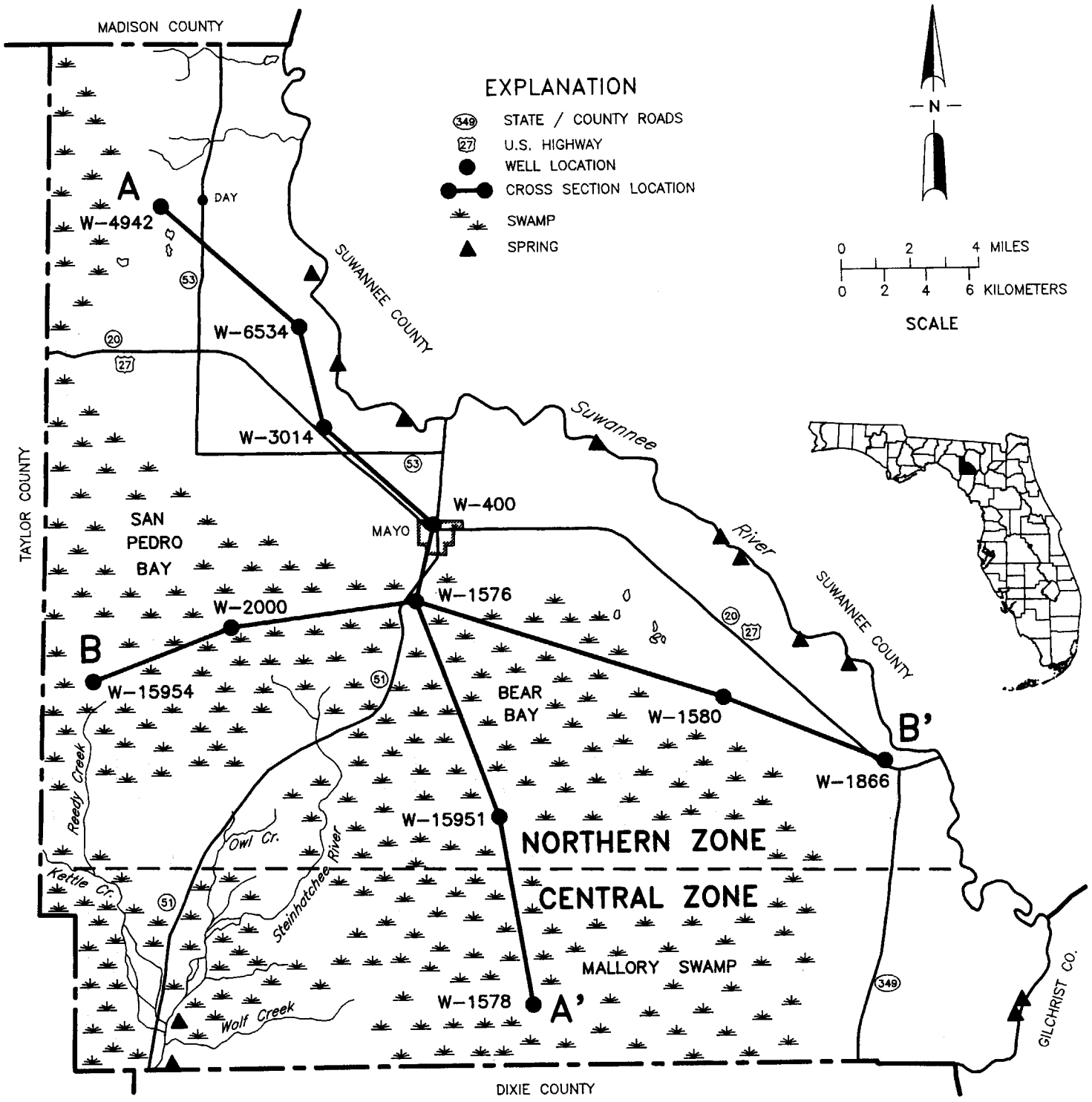


Figure 2.—Geomorphic features in Lafayette County and the locations of cross sections.

from the East Coast across the Florida Panhandle. The Central Zone generally consists of a series of valleys that separate coast-parallel ridges; however, none of the Central Zone ridges are within Lafayette County. The maximum elevations in Lafayette County are in the Northern Zone, and they are more than 120 feet above mean sea level (MSL). The lowest elevations, which are less than 25 feet MSL, are in the Suwannee River Basin in

the southeastern part of the county and along the Steinhatchee River in the southwestern corner of the

(fig. 2). In addition to the flat, low-lying topography of the county, the location of these swampy areas is also

The Gulf Coastal Lowlands is a major geomorphic province that lies within both the Northern and Central Zones. It encompasses all of Lafayette County. This geomorphic province is typically a flat, sandy plain that is commonly incised by river and stream valleys. It also contains relict beach ridge deposits and wetlands. In Lafayette County, however, the only paleo-coastal

"Hydrogeology" section for a discussion of the relationship between hydrogeology and the wetlands in Lafayette County.

The most extensive wetlands in the survey area are San Pedro Bay and Mallory Swamp. San Pedro Bay is along the western edge of the county, and Mallory Swamp is in the south-central third of the county. The surface

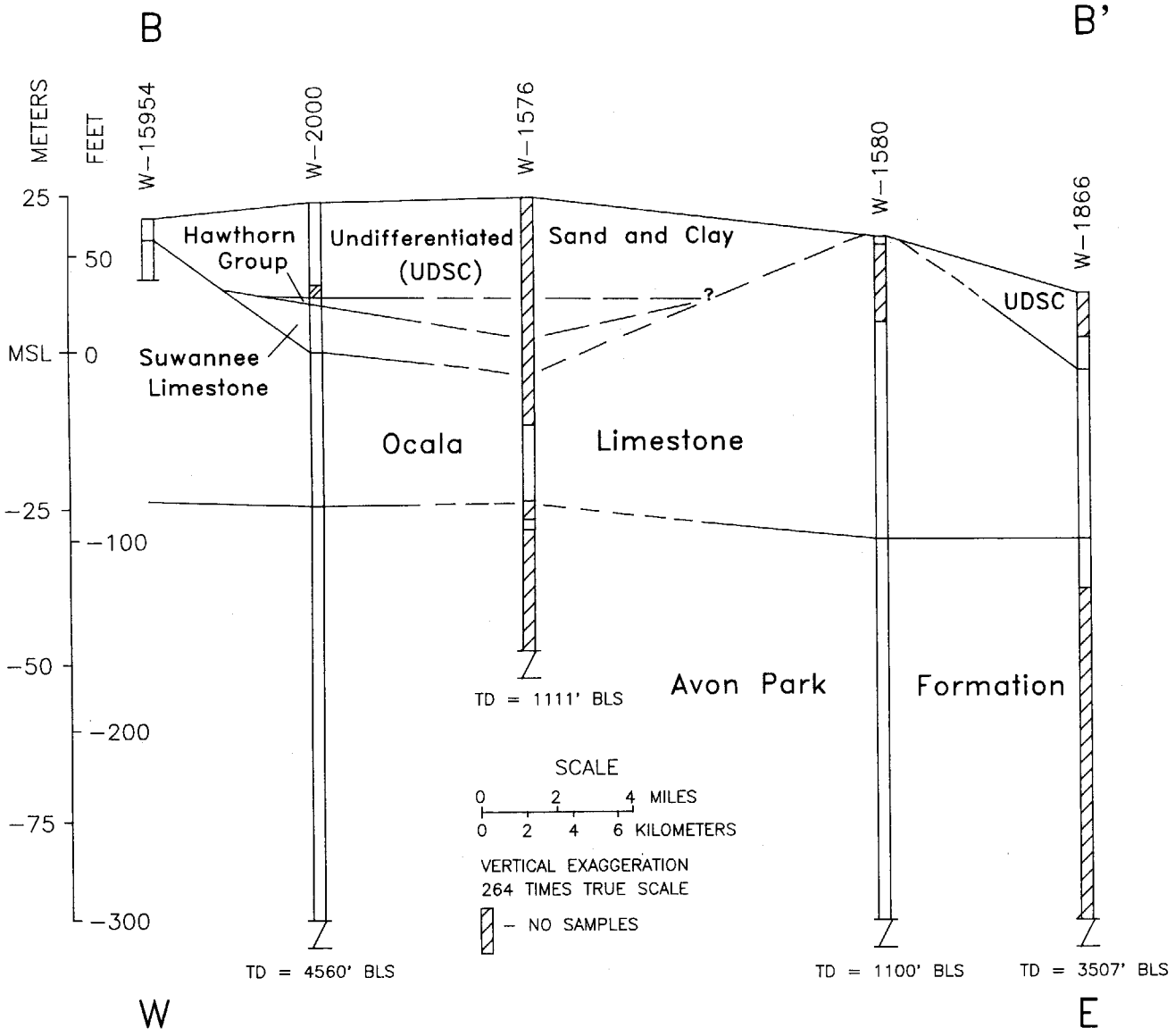


Figure 4.—Geologic cross section of B to B'.

southwestern part of Lafayette County. The head waters of the Steinhatchee River originate in the clayey sands in the central part of the county.

The Suwannee River makes up the eastern border of Lafayette County. The soils that are adjacent to the Suwannee River include the somewhat poorly drained Albany, Garcon, and Ousley soils and the very poorly drained Meadowbrook soils. The Suwannee River Valley extends three to five miles into Lafayette County and is floored by limestone. These Eocene limestones have outcrops along the river, especially during the dry season. Due to artesian conditions in the Floridan aquifer system (see the "Hydrogeology" section), numerous springs are along the Suwannee and Steinhatchee Rivers.

The springs in Lafayette County that flow into the Suwannee River include Alan Mill Pond and Blue, Convict, Fletcher, Mearson, Owens, Perry, Ruth, Troy, and Turtle Springs. Iron Spring and Steinhatchee Spring are associated with the Steinhatchee River. Of the 12 springs in Lafayette County, Troy Spring is the only one that is classified as a first magnitude spring *(20)*. This

classification indicates that the spring has an average discharge of 100 cubic feet per second or more.

Geology

Lafayette County is underlain by several thousand feet of sedimentary rocks. The basement rocks beneath the region are made up of Paleozoic (Ordovician through Devonian) quartz sandstones and shales *(3)* which are found at a depth of more than 4,000 feet below land surface (bls). These rocks have been penetrated by oil test wells and are part of the Paleozoic Suwannee Basin. The oldest geologic unit penetrated by water wells is the Eocene Avon Park Formation. The Eocene through Oligocene units make up the upper part of the Floridan aquifer system in the region, which is the county's main source of drinking water. The following summary of the geology of Lafayette County will be limited to these Eocene-age and younger rocks. Figure 2 shows the location of geologic cross sections, which are shown in figures 3 and 4, depicting subsurface relationships of these geologic units. Interpretations in the cross sections are based on the analysis of wells shown in figure 2 and data from wells that are not shown. Figure 5 is a generalized geologic map that indicates the extent of near-surface (20 feet or less bls) stratigraphic units.

Eocene Series

Avon Park Formation. The Avon Park Formation *(17)* underlies all of Lafayette County. It generally consists of tan to buff dolostones and dolomitic limestones that have occasional organic-rich laminations. This formation ranges in age from approximately 47 to 43 million years old (mya), which corresponds to the Middle Eocene Epoch. The Lower to Middle Eocene Oldsmar Limestone lies beneath the Avon Park Formation in Lafayette County at a depth of more than 900 feet bls. The examination of well cuttings indicates that the uppermost part of the Avon Park

[redacted]

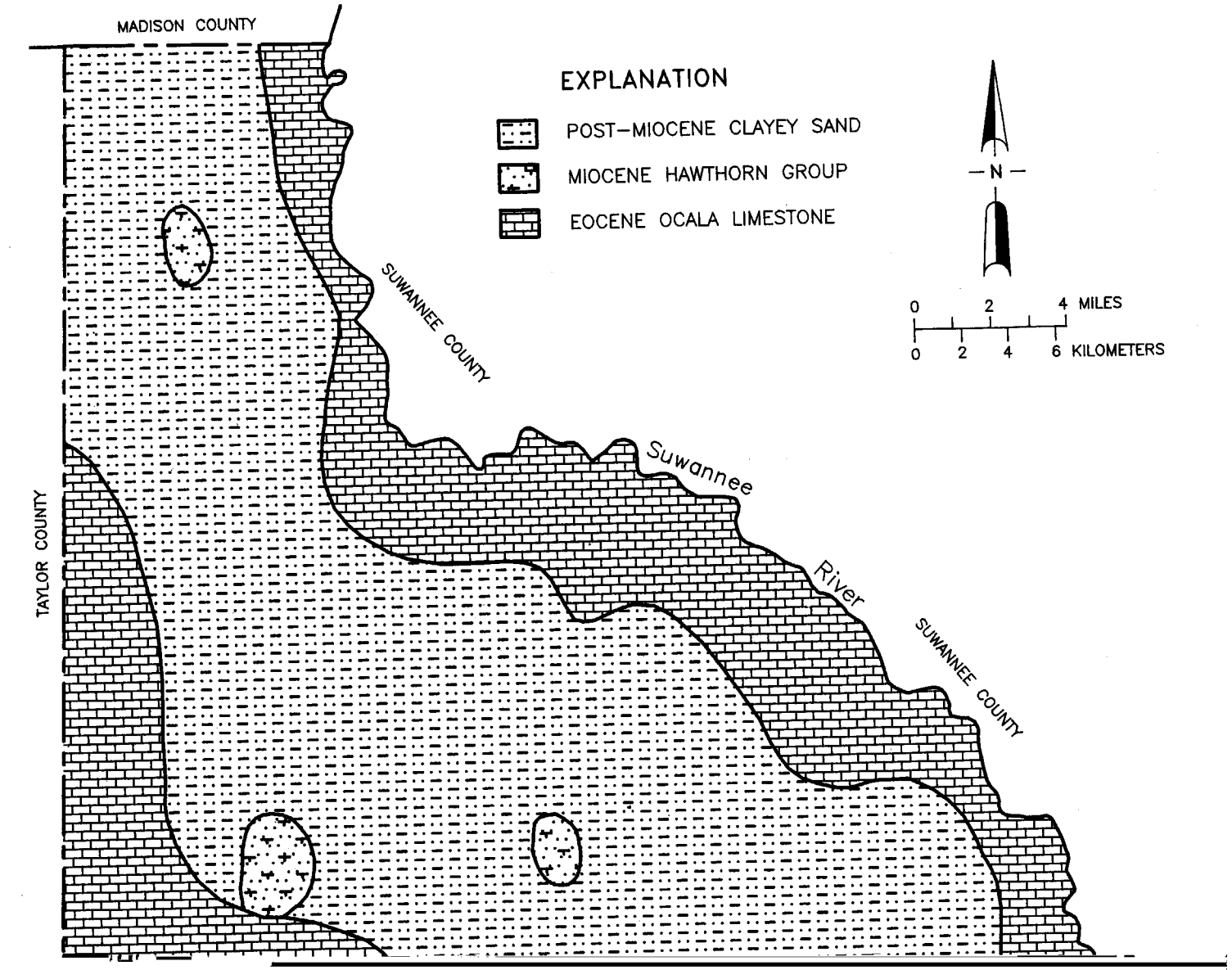
be the result of washout of unconsolidated, possibly organic-rich sediments that are occasionally found in this stratigraphic position.

Ocala Limestone. The Ocala Limestone, which was first named by Dall and Harris *(8)*, consists of white to light gray limestone that has a diverse fossil assemblage. This formation is Late Eocene in age (approximately 40 to 38 mya) and contains characteristic fossils, such as the formaminifera *Lepidocyclina* sp. and echinoids such as *Eupatagus antillarum*. Other fossils observed in the unit include pelecypods, bryzoans, gastropods, and additional foraminifera such as *Nummulities*. The top of the Ocala Limestone is either a surface exposure or an unconformable contact with the Suwannee Limestone or the Hawthorn Group of undifferentiated sands and clays. Accordingly, the depth to the top of the formation ranges from the surface to approximately 90 feet bls. An analysis of well cuttings and core selected for this study suggests that the Ocala Limestone ranges in thickness from 70 to 160 feet.

Dolostones observed at the top of the Ocala Limestone may be part of the Steinhatchee Dolomite Member. The Steinhatchee Dolomite has been described by Puri as a tan, granular, impure dolostone that occurs in the basal position of the Crystal River Formation (upper Ocala Limestone) outcropping near Horseshoe Beach in Dixie County *(19)*. Scott *(22)*, however, has observed other dolostones that are similar in appearance and are interbedded with and at the top of the upper Ocala Limestone in the region. He notes that other unpublished field studies have found Oligocene-age fossils in some of these dolostone lithologies. In order to better understand the age, occurrence, and extent of the Steinhatchee Dolomite Member, further study is needed.

Oligocene Series

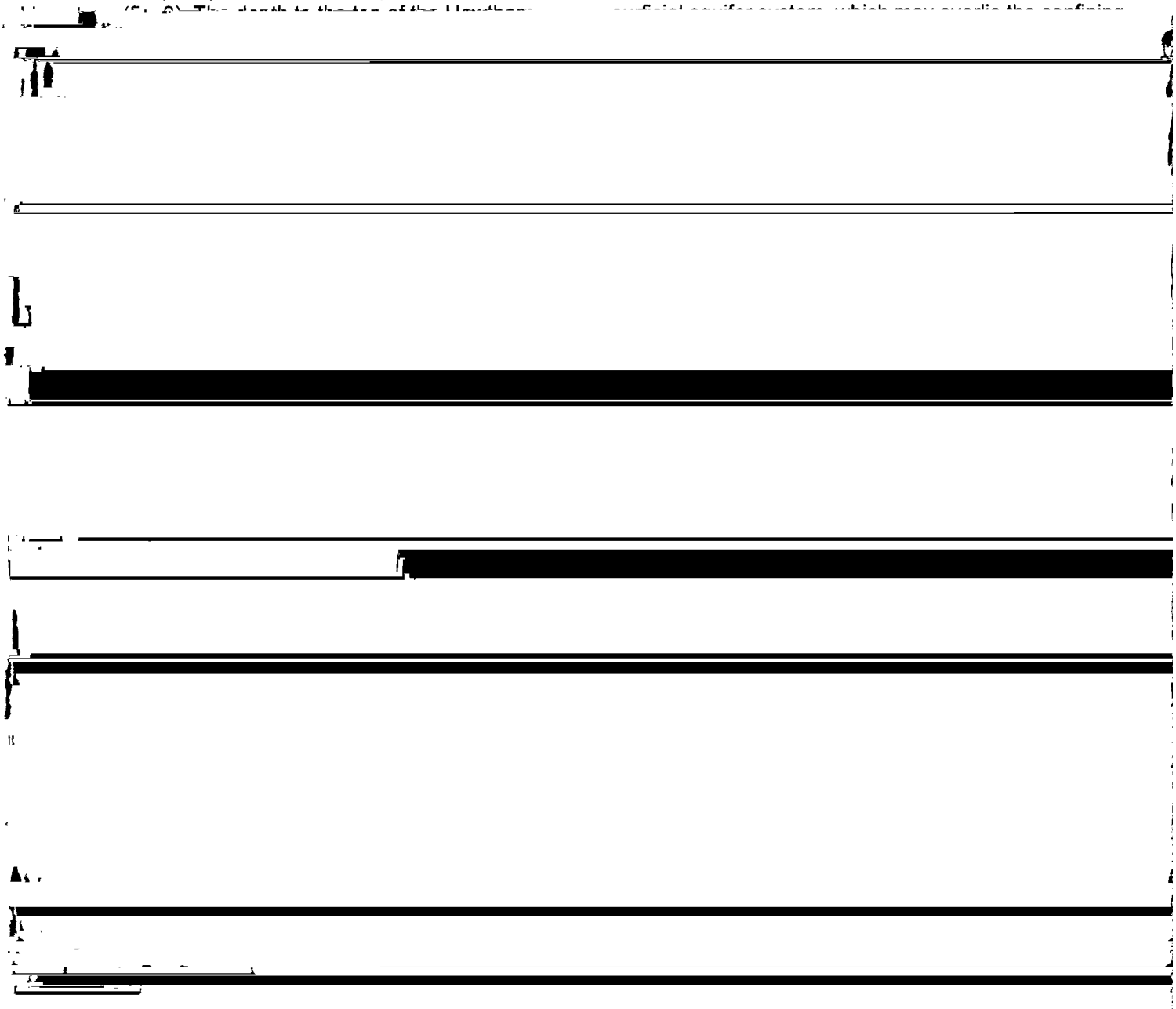
Suwannee Limestone. The occurrence of the Lower Oligocene Suwannee Limestone *(7)* beneath Lafayette


MADISON COUNTY
EXPLANATION
POST–MIOCENE CLAYEY SAND
MIOCENE HAWTHORN GROUP
EOCENE OCALA LIMESTONE
N
0 2 4 MILES
0 2 4 6 KILOMETERS
SUWANNEE COUNTY
Suwannee
River
SUWANNEE COUNTY
TAYLOR COUNTY

and carbonates. In Lafayette County, the Hawthorn Group sediments are noticeably less fossiliferous than the underlying Eocene and Oligocene carbonates. Samples of the Hawthorn Group in Lafayette County include lithologies of white, sandy, phosphatic carbonate and very pale orange to light gray phosphatic clay. Some of the clayey lithologies can be considered "hard rock" phosphate. The subsurface extent of the Hawthorn sediments approximately coincides with that of the underlying Suwannee Limestone. In limited areas, the Hawthorn Group may lie unconformably above the Ocala

surficial (water table) aquifer system that reaches a maximum thickness of 50 feet has been reported *(6)*.

The intermediate confining unit, where present, is comprised of clayey Miocene (Hawthorn Group) sediments and, in some cases, relatively clay-rich post-Miocene sediments. A map that shows general hydrogeologic conditions of the region *(6)* delineates a "Class II—semiconfined Floridan aquifer," which roughly corresponds to the distribution of clayey sands shown in figure 5. The "Class II" area includes the central and western parts of Lafayette County and presumably the



Group, where present, ranges from 5 to 45 feet bls. Available data indicate that all of this unit is overlain by

unit in places. A thin (less than 5 feet thick) Miocene confining unit was also reported to be beneath the surficial

waters are unable to infiltrate into the ground and wetland conditions are thus sustained.

Mineral and Energy Resources

Lafayette County has several potential geological resources; however, no commercial development of these resources is currently taking place *(24)*. Surficial deposits in the county include clayey sand, limestone, and peat. In the deep subsurface layers, test wells have been drilled in search of oil and gas.

Sand and Clay

Surficial sediment deposits in the county are mainly clayey sands *(15)* (fig. 5). No commercial deposits of sand or clay are reported or mined. Small, localized borrow pits that are scattered throughout the county have been used for roadfill. The underlying sediments (the Hawthorn Group) may contain thin, localized layers of clay *(5)*; however, none are suitable for mining.

Limestone and Dolostone

Surface exposures of limestone are along the Suwannee River *(15)*, and limestone and dolostone are in the southwestern corner of the county near the Steinhatchee River (fig. 5). Five limestone quarries are known to have been in operation in the county; however, none are currently active. The Dowling Pit, which was

Paleozoic sediments beneath Lafayette County may lead to future drilling. In the near future, however, no drilling for oil and gas is proposed.

Farming

Lafayette County is a general farming and tree-producing area. The main crops are corn, tobacco, soybeans, peanuts, watermelon, small grains, and a few vegetables. Most of the crops are grown in the northern part of the county.

Most of the soils that are used for crops in Lafayette County are deep, droughty sands that are subject to water erosion and wind erosion. Historically, deep plowing and clean cultivation have been used in this county. Gully-control structures, grassed waterways, windbreaks, and permanent vegetative cover are needed to help control erosion.

The enactment of legislation in 1937 to create Soil Conservation District stirred the interest of many landowners in Lafayette County. The Lafayette County Soil and Water Conservation District has promoted farming, tree planting, and other farming practices with the goal of assisting farmers, public agencies, and other land users with problems related to soil and water conservation. This soil survey is part of that assistance.

For more information about farming, see the section "Crops and Pasture" in this publication.

Figure 6.—Blue Springs attracts thousands of swimmers, divers, canoers, and other visitors each year.

Transportation

In Lafayette County, many county, state, and federal highways facilitate the transportation of goods from farm to market. The major highways are U.S. Highways 27 and 51. Interstates I-10 and I-75 run to the north and east of the county.

How This Survey Was Made

This survey was made to provide information about the soils in the survey area. The information includes a description of the soils and their location and a discussion of the suitability, limitations, and management of the soils

The soils in the survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil is associated with a particular kind of landscape or with a segment of the landscape. By observing the soils in the survey area and relating their position to specific segments of the landscape, a soil scientist develops a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists

other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. The system of taxonomic classification used in the United States is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area are generally collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly

named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, each map unit is made up of the soil or soils for which it is named and some soils in other taxonomic classes. In the detailed soil map units, the latter soils are called inclusions or included soils. In the general soil map units, they are called soils of minor extent.

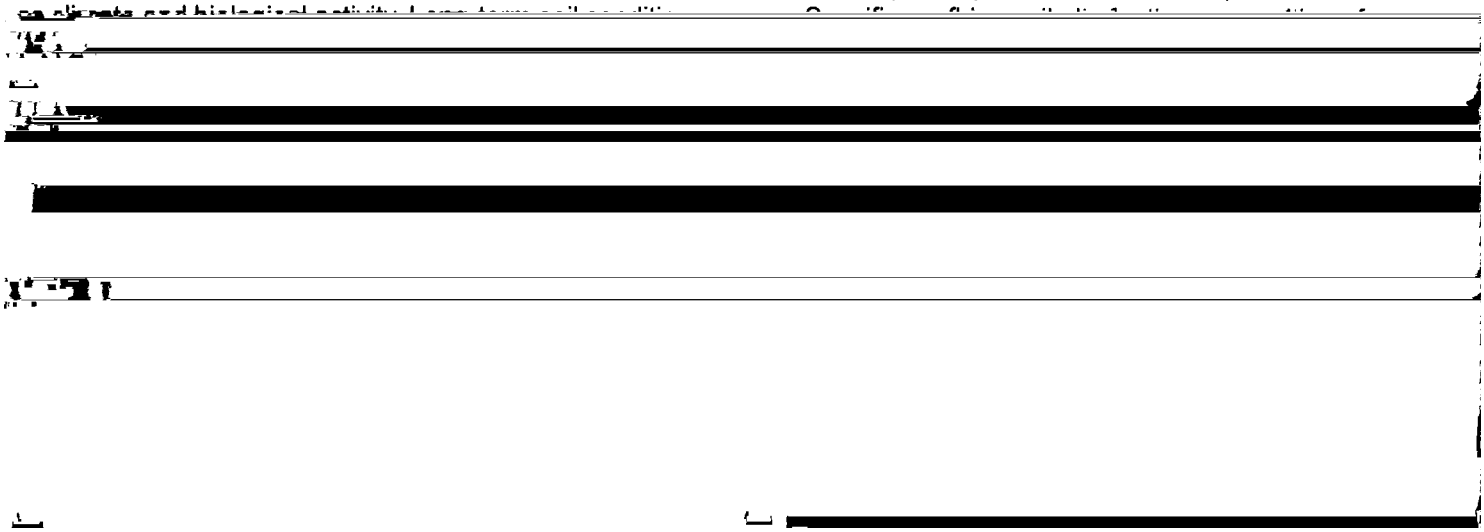
Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed and consequently are not mentioned in the descriptions, especially where the soil pattern was so complex that it was impractical to make enough observations to identify all of the kinds of soils on the landscape.

The presence of inclusions in a map unit in no way diminishes the usefulness or accuracy of the soil data. The objective of soil mapping is not to delineate pure taxonomic classes of soils but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such

Confidence Limits of Soil Survey Information

The statements about soil behavior in this survey can be thought of in terms of probability; they are predictions of soil behavior. The behavior of a soil depends not only on its own properties but on responses to such variables

soils within a depth of 6 feet. The information presented in the soil survey is not meant to be used as a substitute for onsite investigation. Soil survey information can be used to select from among alternative practices or to select general designs that may be needed to minimize the possibility of soil-related failures. It cannot be used to interpret specific points on the landscape.



General Soil Map Units

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils and some minor soils. It is named for the major soils. The soils making up one unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or a building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Soils on Sand Ridges

The general soil map unit in this group consists of excessively drained, nearly level to moderately sloping sandy soils that are on uplands. Most of the soils are sandy throughout the profile. The mapped areas are in the northeastern part of the county and adjoin Suwannee County and Madison County.

1. Penney

Nearly level to moderately sloping, excessively drained soils; sandy throughout

This map unit makes up about 27,914 acres, or about 8 percent, of Lafayette County. It is about 95 percent Penney soils and 5 percent soils of minor extent.

This map unit is in broad areas on uplands. Most of the areas are in the northeastern part of the county, adjacent to the Suwannee County line. The landscape is

sand to a depth of 80 inches or more. The upper 17 inches of underlying material is yellowish brown. The next 31 inches is very pale brown. The lower 25 inches is very pale brown fine sand, and it contains thin layers of yellowish brown loamy fine sand.

The soils of minor extent in this map unit are Blanton, Ortega, Otela, and Ridgewood soils. Blanton, Ortega, and Otela soils are on side slopes. Ridgewood soils are in the slightly lower, wetter areas.

Most areas of this map unit are used for pasture and planted pines. Most areas are poorly suited for crops, moderately suited for pasture, and moderately suited for pine trees. The droughtiness and rapid leaching of plant nutrients are the main limitations for plant growth.

This map unit is well suited for urban development.

Soils on Uplands and Limestone Plains

The two general soil map units in this group consist of excessively drained to moderately well drained, nearly level to gently sloping soils. Some are sandy throughout the profile. Some have loamy material at a depth of more than 40 inches. The mapped areas are in the northeastern and southeastern parts of the county along the Suwannee River.

2. Otela-Penney

Nearly level to gently sloping, excessively drained and moderately well drained soils; some are sandy throughout and some are sandy to a depth of 40 inches or more and are loamy below that depth

This map unit makes up about 34,893 acres, or about 10 percent, of Lafayette County. It is about 55 percent Otela soils, 43 percent Penney soils, and 2 percent soils of minor extent.

This map unit is on uplands that have sinkholes. It is in

Otela soils are moderately well drained. Typically, the surface layer is dark grayish brown fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of 60 inches. The upper 15 inches is brown, the next 10 inches is pale brown, the next 9 inches is very pale brown, and the lower 20 inches is yellowish brown. The subsoil extends to a depth of 80 inches or more. The upper 5 inches is yellowish brown sandy loam, the next 10 inches is yellowish brown sandy loam, and the lower 5 inches is light gray sandy clay loam.

Penney soils are excessively drained. Typically, the surface layer is dark grayish brown sand about 7 inches thick. The subsurface layer is fine sand that extends to a depth of 60 inches. The upper 10 inches is yellowish brown, and the lower 43 inches is very pale brown. Below this to a depth of 80 inches is very pale brown loamy fine sand and thin layers of yellowish brown loamy fine sand.

The soils of minor extent in this map unit are Albany, Blanton, Ortega, and Ridgewood soils. These minor soils generally are in small areas that are intermixed with areas clay loam to a depth of 80 inches or more. The upper 16 inches is brownish yellow, and the lower 20 inches is gray.

Ortega soils are moderately well drained. Typically, the surface layer is very dark grayish brown fine sand about 6 inches thick. The underlying material is fine sand, and it extends to a depth of 80 inches. The upper part is brown and pale brown, and the part below a depth of 52 inches is light gray.

Penney soils are excessively drained. Typically, the surface layer is dark grayish brown sand about 7 inches thick. The subsurface layer is yellowish brown and very pale brown sand to a depth of about 55 inches. Below this depth is about 25 inches of very pale brown fine sand and thin lamellae of yellowish brown loamy fine sand.

The soils of minor extent in this map unit are Albany, Hurricane, and Ridgewood soils in the uplands and Surrency, Plummer, and Clara soils in the cypress ponds, swamps, and small grassy and wet depressions. These minor soils generally are in small areas that are intermixed with areas of maior soils.

areas are connected by narrow drainageways. The natural vegetation consists of slash pine, loblolly pine, and longleaf pine. The understory consists mostly of lopsided indiangrass, hairy panicum, chalky bluestem, creepy bluestem, pineland threeawn, grassleaf goldaster, and a few saw palmettos.

Ridgewood soils are somewhat poorly drained. Typically, the surface layer is very dark gray fine sand about 6 inches thick. The underlying material is fine sand, and it extends to a depth of 80 inches or more. The upper 12 inches is brown; the next 21 inches is very pale brown; and the lower 41 inches is light gray.

Albany soils are somewhat poorly drained. Typically, the surface layer is very dark gray fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of 64 inches. The upper 6 inches is yellowish brown, the next 9 inches is brown, the next 4 inches is light brownish gray, and the lower 39 inches is light gray. The upper part of the subsoil is light gray fine sandy loam, and it extends to a depth of 72 inches. The lower part is light gray sandy clay loam to a depth of 80 inches or more.

[redacted]

the surface layer is very dark gray fine sand about 5 inches thick. The subsurface layer is fine sand, and it extends to a depth of 51 inches. The upper 11 inches is grayish brown, the next 9 inches is brown, and the next 26 inches is pale brown. The subsoil is fine sand, and it extends to a depth of 80 inches or more. The upper 4 inches is dark brown, the next 11 inches is dark reddish brown, and the lower 14 inches is black.

[redacted]

depressional areas are connected by narrow drainageways. In most areas, the natural vegetation consists of slash pine, loblolly pine, and longleaf pine. The understory consists mostly of saw palmetto, gallberry, waxmyrtle, dwarf huckleberry, blackberry, bluestems, and pineland threeawn. In the wetter areas, cypress, blackgum, sweetbay, red maple, and pond pine are predominant. In the understory, cordgrass, bullrush, button bush, elderberry, water hyacinth, arrowhead, and dollarwort are common.

Sapelo soils are poorly drained. Typically, the surface layer is very dark gray fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of 28 inches. The upper 7 inches is gray, and the lower 15 inches is light gray. The upper part of the subsoil is fine sand, and it extends to a depth of 60 inches. The upper 6 inches is black, the next 11 inches is dark reddish brown, and the lower 15 inches is light gray. The lower part of the subsoil is fine sandy loam to a depth of 80 inches or more. The upper 13 inches is light brownish gray, and the lower 7 inches is gray.

[redacted]

surface layer is black mucky fine sand about 10 inches thick. The subsurface layer is fine sand to a depth of 28 inches. The upper 6 inches is light brownish gray, and the lower 12 inches is light gray. The subsoil is light grayish brown sandy loam to a depth of 45 inches and is grayish brown sandy clay loam to a depth of 80 inches or more.

Clara soils are very poorly drained. Typically, the surface layer is black mucky fine sand about 6 inches [redacted]

soils, 26 percent Dorovan soils, 23 percent Wesconnett soils, and 19 percent soils of minor extent. Most of the minor soils are on the flatwoods.

[redacted]

the eastern, southern, and northern parts of the county. The landscape consists mostly of large depressions interspersed with low flatwood ridges. Some of the depressional areas are connected by narrow drainageways. The natural vegetation consists of cypress, pond pine, Carolina ash, blackgum, sweetbay, and red maple. The understory consists mostly of cordgrass, bullrush, button bush, elderberry, water hyacinth, arrowhead, and dollarwort. Pine trees and an understory

northwestern parts of the county. The landscape consists of broad flatwoods interspersed with a few slight knolls and depressions. Some of the depressional areas are connected by narrow drainageways. In the flatwoods, the natural vegetation consists of slash pine, loblolly pine, and longleaf pine. The understory consists mostly of saw palmetto, gallberry, waxmyrtle, dwarf huckleberry, blackberry, bluestems, and pineland threeawn. In the wetter areas, cypress, blackgum, sweetbay, red maple, Carolina ash, and pond pine trees are predominant. The understory consists mostly of cordgrass, bullrush, button bush, elderberry, water hyacinth, arrowhead, and dollarweed.

8. Chaires-Rawhide-Meadowbrook

Nearly level, poorly drained and very poorly drained soils; loamy subsoil below a depth of 40 inches, some are loamy within a depth of 20 inches, some are sandy to a depth of 40 inches or more and have a loamy subsoil, and some have limestone below a depth of 40 inches

This map unit makes up about 69,786 acres, or about 20 percent of the county. It is about 59 percent Chaires soils, 20 percent Rawhide soils, 13 percent Meadowbrook soils, and 8 percent soils of minor extent.

This map unit is on the flatwoods in the southwestern part of the county. The landscape consists of flatwoods interspersed with a few slight knolls and many depressions. Some of the depressional areas are connected by narrow drainageways. In the flatwoods, the natural vegetation consists of slash pine, loblolly pine, and longleaf pine. The understory consists mostly of saw palmetto, gallberry, waxmyrtle, dwarf huckleberry, blackberry, bluestems, and pineland threeawn. In the depressions, cypress, blackgum, sweetbay, red maple, and pond pine are the predominant trees. In the understory, cordgrass, bullrush, button bush, elderberry,

Most areas of this map unit are poorly suited for crops, well suited for pasture, and moderately well suited for pine trees. Wetness is the main limitation. The depressional

This map unit is poorly suited for urban development. The depressional areas are unsuited.

Soils on the Flood Plains

The map units in this group consist of somewhat poorly drained, poorly drained, and very poorly drained, nearly level and gently sloping soils. Some of the soils are sandy throughout the profile, some are sandy to a depth of 20 to 80 inches and have a loamy subsoil, and some have stratified layers of sandy, loamy, and clayey material. The soils are mainly on flood plains along the Suwannee and Steinhatchee Rivers.

9. Clara-Fluvaquents-Tooles

Nearly level, very poorly and poorly drained soils on flood plains; some are sandy throughout, some are stratified with sandy, loamy, and clayey layers, and some are sandy to a depth of 20 to 40 inches and are loamy below that depth

This map unit makes up about 17,446 acres, or about 5

Tooles soils are poorly drained. Typically, the surface layer is very dark brown fine sand about 6 inches thick. The subsurface layer is light brownish gray fine sand to a depth of 14 inches. The upper part of the subsoil is fine sand to a depth of 35 inches. The upper 11 inches is yellowish brown, and the lower 10 inches is light yellowish brown. The lower part of the subsoil is light brownish gray sandy clay loam to a depth of 50 inches, and below this depth is limestone bedrock.

The soils of minor extent in this map unit are Chaires, Harbeson, Leon, Lynn Haven, and Wesconnett soils. These minor soils generally are in small areas that are intermixed with areas of major soils.

Most areas of this map unit are unsuited for crops, pasture, and pine trees. The wetness and flooding are the main limitations. Some areas that are not flooded for long periods can support pine trees.

Most areas of this map unit are unsuited for urban development because of the wetness and flooding.

10. Albany-Meadowbrook-Ousley

Nearly level to gently sloping, somewhat poorly drained to very poorly drained soils on flood plains; some are sandy to a depth of 40 inches or more and are loamy below that depth and some are sandy throughout

This map unit makes up about 10,468 acres, or about 3 percent of the county. It is about 30 percent Albany soils, 25 percent Meadowbrook soils, 17 percent Ousley soils, and 28 percent soils of minor extent.

This map unit is on the long, narrow ridges of the flood plain along the Suwannee River in the eastern part of the county. The landscape is interspersed with depressions. Some of the depressional areas are connected by narrow drainageways. The natural vegetation consists of loblolly pine, longleaf pine, live oak, laurel oak, and water oak. The understory consists mostly of lopsided indiangrass, hairy panicum, chalky bluestem, creepy bluestem, pineland threeawn, grassleaf goldaster, and switchgrass.

Albany soils are somewhat poorly drained. Typically, the surface layer is very dark gray fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of 53 inches. The upper 10 inches is yellowish brown, the next 9 inches is brown, the next 4 inches is light brownish gray, and the lower 24 inches is light gray. The subsoil is sandy clay loam, and it extends to a depth of 80 inches. The upper 2 inches is light gray, and the lower 25 inches is mottled yellowish brown, pale brown, and light gray.

Meadowbrook soils are very poorly drained. Typically, the surface layer is black mucky fine sand about 6 inches thick. The subsurface layer is gray fine sand to a depth of 45 inches. The subsoil is gray and light gray sandy clay loam to a depth of 80 inches or more.

Ousley soils are somewhat poorly drained. Typically, the surface layer is dark gray fine sand about 4 inches thick. The underlying material is fine sand, and it extends to a depth of 80 inches or more. The upper 15 inches is pale brown, the next 21 inches is brown, the next 17 inches is light brownish gray, and the lower 23 inches is light gray.

The soils of minor extent in this map unit are Blanton, Leon, Ortega, Penney, and Surrency soils. These minor soils generally are in small areas that are intermixed with areas of major soils.

Most areas of this map unit are poorly suited for crops, moderately suited for pasture, and moderately suited to highly suited for pine trees. The flooding and wetness are the main limitations.

This map unit is poorly suited for urban development.

11. Garcon-Meadowbrook-Albany

Nearly level to gently sloping, somewhat poorly drained to very poorly drained soils on flood plains; some are sandy to a depth of 20 to 40 inches and are loamy below that depth and some are sandy to a depth of 40 inches or more and are loamy below that depth

This map unit makes up about 6,978 acres, or about 2 percent of the county. It is about 43 percent Garcon soils, 28 percent Meadowbrook soils, 23 percent Albany soils, and 6 percent soils of minor extent.

This map unit is on the long, narrow ridges of the flood plain along the Suwannee River in the northeastern part of the county. The landscape is interspersed with depressions. Some of the depressional areas are connected by narrow drainageways. The natural vegetation consists of loblolly pine, longleaf pine, live oak, laurel oak, and water oak. The understory consists mostly of lopsided indiangrass, hairy panicum, chalky bluestem, creepy bluestem, pineland threeawn, grassleaf goldaster, and switchgrass.

Garcon soils are somewhat poorly drained. Typically, the surface layer is dark gray fine sand about 7 inches thick. The subsurface layer is fine sand, and it extends to a depth of 26 inches. The upper 12 inches is brown, and the lower 7 inches is very pale brown. The subsoil is sandy clay loam and sandy loam to a depth of 51 inches. The upper 14 inches is brownish yellow sandy clay loam that has light brownish gray and strong brown mottles, and the lower 11 inches is light brownish gray sandy loam. Below this to a depth to 60 inches is white loamy fine sand that has brownish yellow mottles. The next 20 inches consists of white fine sand to a depth of 80 inches or more.

Meadowbrook soils are very poorly drained. Typically, the surface layer is black mucky fine sand about 6 inches thick. The subsurface layer is gray fine sand to a depth of 45 inches. The subsoil is gray and light gray sandy clay

Albany soils are somewhat poorly drained. Typically, the surface layer is very dark gray fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of 53 inches. The upper 10 inches is yellowish brown, the next 9 inches is brown, the next 4 inches is light brownish gray, and the lower 24 inches is light gray. The subsoil is sandy clay loam, and it extends to a depth of 80 inches. The upper 2 inches is light gray, and the lower 25 inches is mottled yellowish brown, pale brown, and light gray.

The soils of minor extent in this map unit are Blanton, Leon, Ortega, Penney, and Surrency soils. These minor soils generally are in small areas that are intermixed with areas of major soils.

Most areas of this map unit are poorly suited for crops, moderately suited for pasture, and moderately high to highly suited for pine trees. The flooding and wetness are the main limitations.

This map unit is poorly suited for urban development.

Detailed Soil Map Units

The map units on the detailed soil maps at the back of this survey represent the soils in the survey area. The map unit descriptions in this section, along with the soil

made up of all of them. Pamlico and Dorovan soils, depressional, is an undifferentiated group in this survey area.

Most map units include small scattered areas of soils

available water capacity is very low. Permeability is rapid throughout the soil.

These soils are in the Longleaf Pine-Turkey Oak Hills ecological plant community. In most areas, the natural vegetation includes slash pine, loblolly pine, longleaf pine, sand pine, live oak, post oak, turkey oak, and bluejack oak. The understory consists of lopsided indiangrass, hairy panicum, greenbriar, hawthorn, persimmon, fringeleaf paspalum, hairy tick clover, dwarf huckleberry, chalky bluestem, creepy bluestem, and pineland threeawn. Most areas of this soil are used for the production of planted pine, crops, or pasture.

This soil has very severe limitations for cultivated crops because of droughtiness during dry periods. Plant

nutrients leach rapidly. Corn, peanuts, soybeans, tobacco, and watermelons are crops that can be grown with intensive management and the use of good conservation practices. Using a crop rotation system that includes cover crops, returning crop residue to the soil, and properly applying fertilizer and lime are practices that

trafficability. Suitable topsoil fill material or some other type of surface stabilization is necessary to overcome this limitation. Soil blowing is a hazard. Establishing and maintaining a good vegetative cover or planting windbreaks can control soil blowing.

This Penney soil is in capability subclass IVs, and the woodland ordination symbol is 8S.

4—Blanton-Ortega complex, 0 to 5 percent slopes

These soils are nearly level to gently sloping and are moderately well drained. They are on uplands. The mapped areas are irregular in shape and range from

about 20 to more than 150 acres in size. The slope is nearly smooth to convex.

Typically, the surface layer of the Blanton soil is dark gray fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of 44 inches. The upper 23 inches is light

Figure 7.—An area of Penney sand, 0 to 5 percent slopes. This soil is well suited to most urban uses.

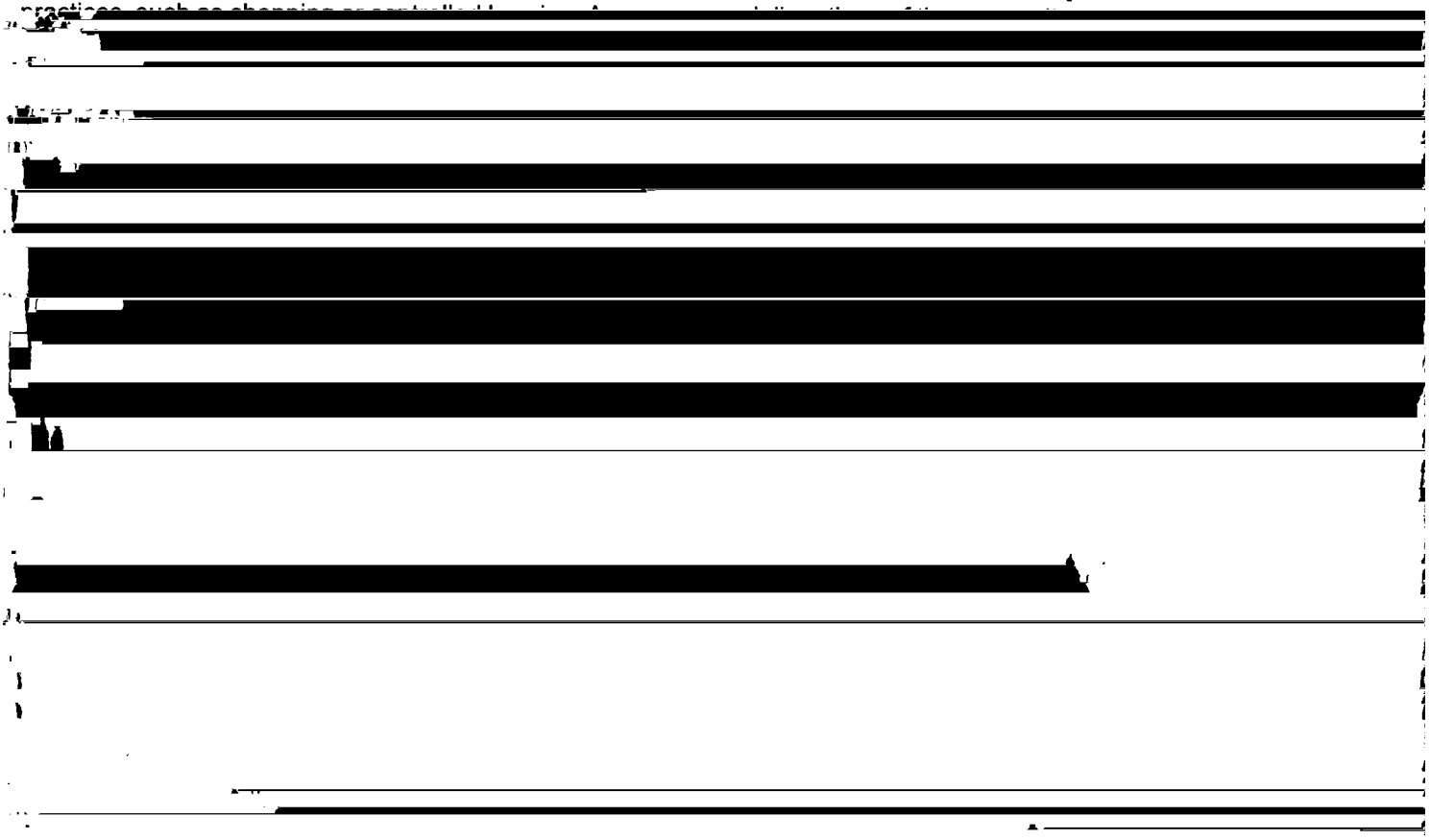
slow to moderate in the Blanton soil and rapid throughout the Ortega soil.

These soils are in the mixed Longleaf Pine-Turkey Oak Hills ecological plant community. In most areas, the natural vegetation includes slash pine, loblolly pine, longleaf pine, live oak, bluejack oak, laurel oak, post oak, southern red oak, and turkey oak. The understory consists of lopsided indiangrass, hairy panicum, greenbriar, hawthorn, persimmon, fringeleaf paspalum, hairy tick

practices. Using a crop rotation system that includes cover crops, returning crop residue to the soil, and properly applying fertilizer and lime are practices that are necessary for good yields. Irrigation is desirable during droughty periods. Soil blowing is a severe hazard if the topsoil is left unprotected.

This map unit is moderately suited to tame pasture. Deep-rooting grasses, such as improved bahiagrass and bermudagrass, are suited. Yields are generally reduced by

The potential productivity for pine trees is high for the Blanton soil and moderately high for the Ortega soil. Slash pine, loblolly pine, and longleaf pine are suitable for planting. The thick, sandy texture restricts the use of wheeled equipment. This limitation can be overcome by harvesting when the soils are moist. Seedling mortality, which is caused by droughtiness, can be partially reduced by increasing the tree planting rate and the planting depth. Plant competition can be controlled by site preparation



harvesting system that leaves most of the biomass on the surface is recommended.

This map unit has slight limitations for dwellings without basements and local roads and streets. It has moderate limitations for septic tank absorption fields. During wet periods, the water table may slow the downward movement of effluent and can become contaminated.

This map unit has severe limitations for recreational uses. The loose, sandy surface layer limits trafficability. Suitable topsoil fill material or some other type of surface stabilization is necessary to overcome this limitation. Soil blowing is a hazard. Establishing and maintaining a good vegetative cover or planting windbreaks can control soil blowing.

The Blanton soil is in capability subclass IIIs, and the woodland ordination symbol is 11S. The Ortega soil is in capability subclass IIIs, and the woodland ordination symbol is 10S.

In 95 percent of the areas mapped as Otela-Penney complex, 0 to 5 percent slopes, Otela, Penney, and similar soils make up 80 to 100 percent of the map unit. Generally, the mapped areas are about 55 percent Otela and similar soils and about 43 percent Penney and similar soils. The components of this map unit are so intricately intermingled that it was not practical to map them separately. The proportions and patterns of Otela, Penney, and similar soils are relatively consistent in most

Soils that have dissimilar characteristics make up about 0 to 20 percent of the map unit. In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent. The dissimilar soils included in mapping are small areas of Blanton and Ortega soils and areas of soils that have sand over rock. Individual areas of inclusions are smaller than 5 acres in size. Blanton and Ortega soils are moderately well drained and are in the lower parts of the landscape.

A seasonal high water table is at a depth of 48 to 72 inches for 1 to 3 months for the Otela soil during wet periods in most years. The Penney soil has a seasonal high water table at a depth of more than 72 inches. The available water capacity is low in the Otela soil and very low in the Penney soil. Permeability is moderate in the Otela soil and rapid throughout the Penney soil.

These soils are in the Longleaf Pine-Turkey Oak Hills ecological plant community. In most areas, the natural

Figure 8.—An area of Otela-Penney complex, 0 to 5 percent slopes. Areas of this map unit are used for pasture, pecan groves, or pine plantations.

applications of fertilizer and lime, and controlled grazing. Irrigation improves the quality of grazing and of hay crops. If available during long dry periods, the use of irrigation water may be economically justifiable. These soils are not suited to shallow-rooting pasture plants because the soils cannot retain sufficient moisture in the rooting zone for good growth.

The potential productivity for pine trees is moderately high for the Otela soil and moderate for the Penney soil. Slash pine, longleaf pine, and loblolly pine are suitable for planting. The thick, sandy texture restricts the use of wheeled equipment. This limitation can be overcome by harvesting when the soils are moist. Seedling mortality, which is caused by droughtiness, can be partially reduced by increasing the tree planting rate and the planting depth. Plant competition can be controlled by site preparation practices, such as chopping or controlled burning. A harvesting system that leaves most of the biomass on the surface is recommended.

This map unit has slight limitations for dwellings without basements and local roads and streets. It has moderate limitations for septic tank absorption fields in areas of the Otela soil because of the wetness and slow permeability. It has slight limitations for septic tank absorption fields in areas of the Penney soil. In areas that have a concentration of homes and septic tank absorption fields, ground-water contamination can be a hazard because of poor filtration.

This map unit has severe limitations for recreational uses. The loose, sandy surface layer limits trafficability. Suitable topsoil fill material or some other type of surface stabilization is necessary to overcome this limitation. Soil blowing is a hazard. Establishing and maintaining a good vegetative cover or planting windbreaks can control soil blowing.

The Otela soil is in capability subclass IIIs, and the woodland ordination symbol is 10S. The Penney soil is in capability subclass IVs, and the woodland ordination symbol is 8S.

6—Oaky-Rawhide, depressional, complex

The poorly drained Oaky soil is on flatwoods. The very poorly drained Rawhide soil is in small depressions that are about 2 to 4 acres in size and are interspersed in the flatwoods. These soils occur in a regular, repeating pattern on the landscape. The slope is smooth or slightly concave and ranges from 0 to 2 percent. Individual areas are irregular in shape and are more than 100 acres in size.

Typically, the surface layer of the Oaky soil is very dark gray fine sand about 6 inches thick. The subsurface layer is light gray fine sand to a depth of 13 inches. The subsoil is gray sandy clay loam to a depth of 80 inches.

Typically, the surface layer of the Rawhide, depressional, soil is black mucky fine sand about 6 inches thick. The subsoil is sandy clay loam to a depth of 80 inches or more. The upper 12 inches is black, the next 47 inches is very dark gray, and below this is gray to a depth

In 80 percent of the areas mapped as Oaky-Rawhide, depressional, complex, Oaky, Rawhide, depressional, and similar soils make up 80 to 100 percent of the map unit. The similar soils include soils like Oaky and Rawhide soils that are underlain by soft limestone. Generally, the mapped areas are about 65 percent Oaky soil and similar soils in broad areas in the flatwoods and about 25 percent Rawhide soil and similar soils. The components of this map unit occur as areas so intricately intermingled that it was not practical to map them separately at the scale used in mapping. The proportions and patterns of Oaky, Rawhide, and similar soils are relatively consistent in most mapped areas.

magnolia, scattered sweetgum, and water oak. Pondcypress, baldcypress, laurel oak, pond pine, sweetbay, and water oak grow in the lower areas. The understory consists of gallberry, grape, greenbrier, lopsided indiangrass, chalky bluestem, scattered saw palmettos, hairy panicum, pineland threeawn, and little bluestem in the flatwoods. It consists of maidencane, St. Johnswort, and various other water-tolerant grasses in the lower areas. Most areas of this map unit are used for the production of planted pine.

These soils have severe limitations for cultivated crops because of the wetness and the ponding in depressions. They have low natural fertility. However, they are suited to most vegetable crops if they are intensively managed, including the use of a water-control system that removes excess water rapidly and provides for subsurface irrigation. Soil-improving crops and crop residue can protect the soils from erosion and maintain the content of

planting on beds. Fertilizer should be applied according to the needs of the crop. Most of the depressional areas are unsuited for cultivated crops.

This map unit is well suited to tame pasture if water is properly controlled. If properly managed, a good pasture of grass or a grass-legume mixture can be established. Water-control measures are needed to remove the excess surface water during long, rainy periods. Irrigation is needed for the best yields of white clover or other adapted, shallow-rooted pasture plants during dry periods. Establishing an optimum plant population, applying fertilizer and lime, and controlling grazing help to maintain a good plant cover and increase the production of forage.

This map unit has severe limitations for dwellings without basements, local roads and streets, and septic tank absorption fields. The seasonal high water table, poor filtration, and slow percolation are the main limitations. Deep drainage reduces the wetness. Suitable fill material can be used to elevate building sites. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table and improve the percolation. Drainage and the use of suitable fill to elevate road beds minimizes wetness in areas of road construction.

This map unit has severe limitations for recreational development, such as playgrounds, picnic areas, and paths and trails. The seasonal high water table, ponding in the depressions, and the sandy surface texture are the main limitations. Drainage is needed before using areas of this map unit for these purposes. Suitable topsoil fill material or resurfacing is needed to improve the trafficability.

The Oaky soil is in capability subclass IVw, and the woodland ordination symbol is 13W. The Rawhide, depressional, soil is in capability subclass VIIw, and the woodland ordination symbol is 2W.

7—Chaires-Chaires, depressional, complex

These poorly drained and very poorly drained, nearly level soils are in broad areas on the flatwoods. The Chaires, depressional, soil is in small depressions that are about 2 to 4 acres in size and are interspersed in the flatwoods. The soils occur in a regular, repeating pattern on the landscape. The slope is smooth or slightly concave and ranges from 0 to 2 percent. Individual areas are irregular in shape and are more than 100 acres in size.

Typically, the surface layer of the Chaires soil that is in a broad area on the flatwoods is black fine sand about 8 inches thick. The subsurface layer is fine sand to a depth of 24 inches. The upper 6 inches is grayish brown, and the lower 9 inches is light brownish gray. The upper part of the subsoil is loamy fine sand to fine sand, and it extends to a depth of 32 inches. The upper 4 inches is black, and the next 4 inches is dark brown. The next 14 inches is brown fine sand. The lower part of the subsoil is grayish brown sandy clay loam to a depth of 72 inches or more.

Typically, the surface layer of the Chaires, depressional, soil is black mucky fine sand about 3 inches thick. The subsurface layer extends to a depth of about 24 inches. It is fine sand. The upper 10 inches is grayish brown, and the lower 11 inches is light brownish gray. The upper part of the subsoil is fine sand, and it extends to a depth of 50 inches. The upper 8 inches is black, the next 8 inches is dark brown, and the lower 10 inches is brown. The lower part of the subsoil is sandy clay loam to a depth of 80 inches or more. The upper 15 inches is grayish brown, and the lower 15 inches is light brownish gray.

In 80 percent of areas mapped as Chaires-Chaires, depressional, complex, Chaires and similar soils make up 80 to 100 percent of the map unit. The similar soils include soils that have a loamy subsoil within a depth of 40 inches and soils that have the upper part of the subsoil at a depth of more than 30 inches. Generally, the mapped areas are about 55 percent Chaires soil and similar soils in broad areas in the flatwoods and about 35 percent Chaires, depressional, soil and similar soils. The components of this map unit occur as areas so intricately intermingled that it was not practical to map them separately at the scale used in mapping. The proportions and patterns of Chaires and similar soils are relatively consistent in most mapped areas.

In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent of the unit. The dissimilar soils included in mapping are small areas of Leon, Oaky, and Tooles soils and other soils that are underlain by soft limestone. Individual areas of inclusions are smaller than 5 acres in size. These soils are mostly on flatwoods. In some areas, Leon soils are in depressions.

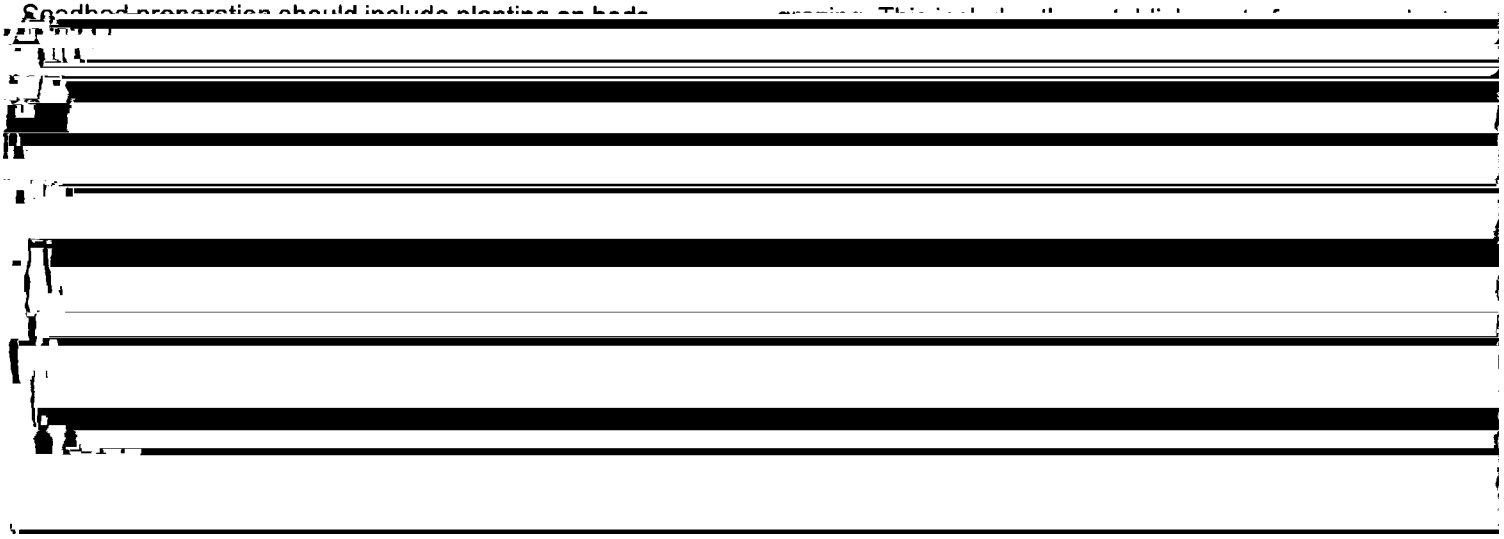
A seasonal high water table is at a depth of 6 to 18 inches in areas of the Chaires soil on flatwoods for 1 to 3 months during wet periods in most years. The Chaires, depressional, soil has a seasonal high water table above the surface for 6 to 9 months during wet periods and for short periods after heavy rainfall. The seasonal high water table recedes to a depth of 24 to 40 inches or more in both soils during droughty periods. The available water capacity is low. Permeability is moderately slow.

These soils are in the North Florida Flatwoods ecological plant community. In most areas in the flatwoods, the natural vegetation includes slash pine, longleaf pine, loblolly pine, live oak, laurel oak, and water oak. Pondcypress, pond pine, scattered sweetgum, red maple, sweetbay, baldcypress, and blackgum grow in the lower areas. The understory consists of gallberry, grape, greenbrier, lopsided indiangrass, chalky bluestem, scattered saw palmettos, hairy panicum, pineland threeawn, and little bluestem in the flatwoods. It consists of maidencane, St. Johnswort, and various other water-tolerant grasses in the lower areas. Most areas of this map unit are used for the production of planted pine or pasture.

These soils have severe limitations for cultivated crops because of the wetness, ponding in the depressions, and low natural fertility. However, they are suited to most vegetable crops if they are intensively managed, including the use of a water-control system that removes excess water rapidly and provides for subsurface irrigation. Soil-improving crops and crop residue can protect the soils from erosion and maintain the content of organic matter.

Figure 9.—An area of Chaires-Chaires, depressional, complex. The depressional area is poorly suited to planted pine because of the ponding. It supports the natural vegetation, mostly pondcypress. The Chaires soil on flatwoods has been cleared and prepared for the next planting.

Seedbed preparation should include planting on beds [redacted]



control competing vegetation, and facilitate planting. Leaving all of the plant debris on the site helps to maintain the content of organic matter in the soils. The trees respond well to applications of fertilizer.

This map unit has severe limitations for dwellings without basements, local roads and streets, and septic tank absorption fields. The seasonal high water table, poor filtration, and slow percolation are the main limitations. Deep drainage reduces the wetness. Suitable fill material can be used to elevate building sites. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table and improve the percolation. Drainage and the use of suitable fill to elevate road beds minimizes wetness in areas of road construction.

This map unit has severe limitations for recreational development, such as playgrounds, picnic areas, and paths and trails. The seasonal high water table that is near the surface during wet periods, the ponding in depressions, and the sandy surface texture are severe limitations. Drainage is needed before using areas of this map unit for these purposes. Suitable topsoil fill material or resurfacing is needed to improve the trafficability.

The Chaires soil is in capability subclass IVw, and the woodland ordination symbol is 10W. The Chaires, depressional, soil is in capability subclass VIIw, and the woodland ordination symbol is 2W.

9—Sapelo-Chaires, depressional, complex

These poorly drained and very poorly drained, nearly level soils are in broad areas on the flatwoods. The Chaires, depressional, soil is in small depressions that are about 3 to 5 acres in size and are interspersed in the flatwoods. The soils occur in a regular, repeating pattern on the landscape. The slope is smooth or slightly concave and ranges from 0 to 2 percent. Individual areas are irregular in shape and are more than 100 acres in size.

Typically, the surface layer of the Sapelo soil is very dark gray fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of 28 inches. The upper 7 inches is [illegible] and the lower 15 inches is light gray. The part of the subsoil is fine sand, and it extends to a depth of 65 inches. The upper 9 inches is black, the next 9 inches is dark brown, and the lower 22 inches is brown. The lower part of the subsoil is grayish brown sandy clay loam to a depth of 75 inches and is light brownish gray sandy loam to a depth of 80 inches or more.

In 80 percent of areas mapped as Sapelo-Chaires, depressional, complex, Sapelo soil and similar soils make up 80 to 100 percent of the map unit. These similar soils include soils that have a loamy subsoil within a depth of 40 inches of the surface and soils that have the upper part of the subsoil at a depth of more than 30 inches. Generally, the mapped areas are about 65 percent Sapelo soil and similar soils in broad areas in the flatwoods and about 25 percent Chaires, depressional, soil and similar soils. The components of this map unit occur as areas so intricately intermingled that it was not practical to map them separately at the scale used in mapping. The proportions and patterns of Sapelo and Chaires soils and similar soils are relatively consistent in most mapped areas.

In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent of the unit. The dissimilar soils included in mapping are small areas of Albany, Hurricane, and Leon soils and other soils that are similar to the Sapelo soil but are somewhat poorly drained and are at slightly higher elevations. Individual areas of inclusions are smaller than 5 acres in size.

A seasonal high water table is at a depth of 6 to 18 inches in areas of the Sapelo soil on flatwoods for 1 to 3 months during wet periods in most years. A seasonal high water table is above the surface of the Chaires, depressional, soil for 6 to 9 months during wet periods and for short periods after heavy rainfall in dry periods during most years. It recedes to a depth of 24 to 40 inches or more in both soils during droughty periods. The available water capacity is low. Permeability is moderately slow to moderate.

These soils are in the North Florida Flatwoods ecological plant community. In most areas in the flatwoods, the natural vegetation includes slash pine, [illegible] of pine, loblolly pine, live oak, laurel oak, and water

vegetable crops if they are intensively managed, including the use of a water-control system that removes excess water rapidly and provides for subsurface irrigation. Soil-improving crops and crop residue can protect the soils from erosion and maintain the content of organic matter. Seedbed preparation should include planting on beds. Fertilizer should be applied according to the needs of the crop. Most of the depressional areas are unsuited for cultivated crops.

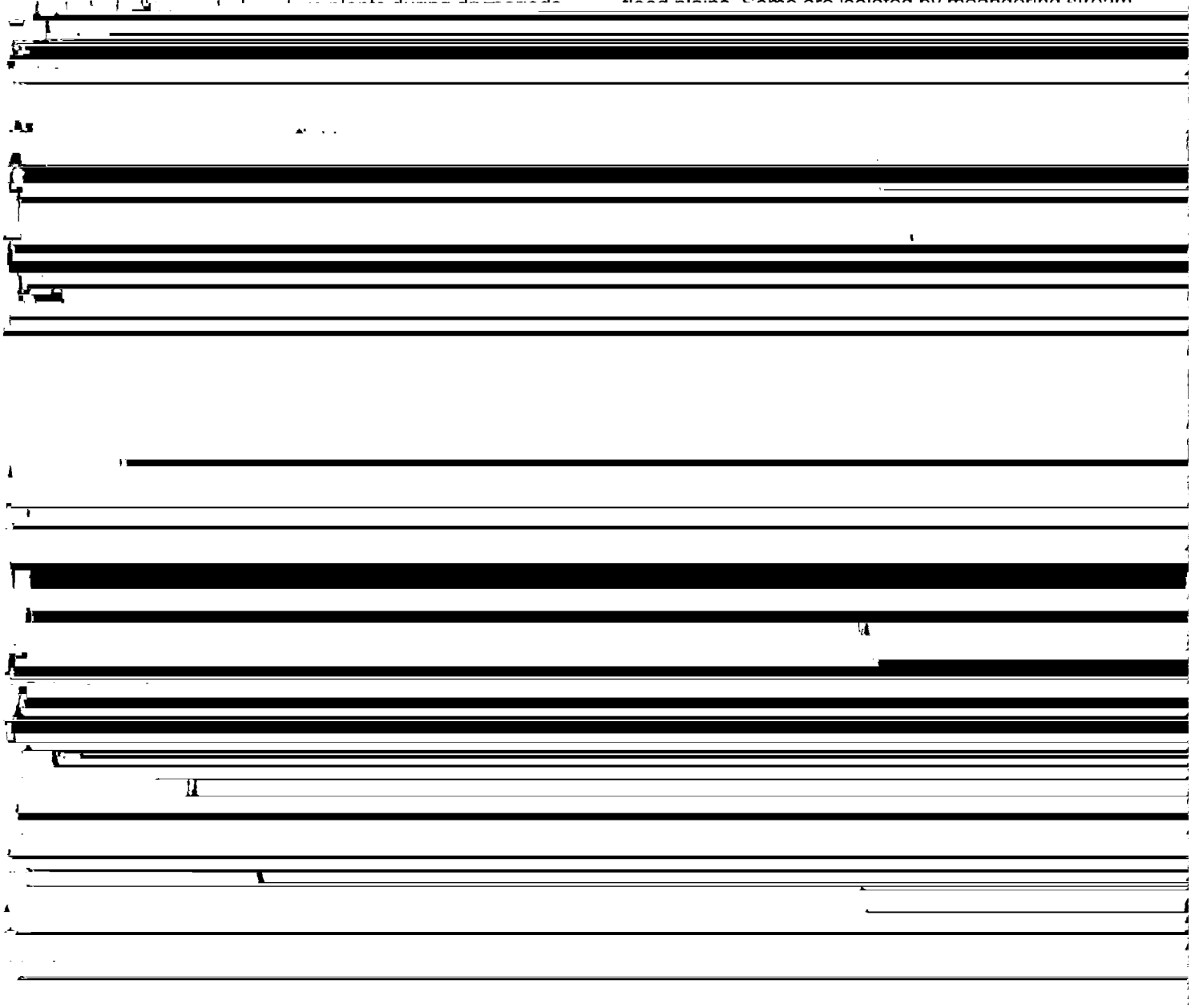
This map unit is well suited to tame pasture if water is properly controlled. If properly managed, a good pasture of grass or a grass-legume mixture can be established. Water-control measures are needed to remove the excess surface water during long, rainy periods. Irrigation is needed for the best yields of white clover or other

paths or trails. The seasonal high water table that is near the surface during wet periods, the ponding in depressions, and the sandy surface texture are severe limitations. Drainage is needed before using areas of this map unit for these purposes. Suitable topsoil fill material or resurfacing is needed to improve the trafficability.

The Sapelo soil is in capability subclass IVw, and the woodland ordination symbol is 10W. The Chaires, depressional, soil is in capability subclass VIIw, and the woodland ordination symbol is 2W.

10—Pamlico and Dorovan soils, frequently flooded

These very poorly drained, nearly level soils are on



These soils are in the Swamps Hardwoods ecological plant community. In most areas, the natural vegetation is pondcypress, baldcypress, pond pine, blackgum, sweetbay, Carolina ash, and red maple. The understory is mainly cordgrass, bullrush, button bush, elderberry, water hyacinth, arrowhead, and dollarwort.

These soils have severe limitations for cultivated crops, tame pasture, and planted pine trees because of the

dissimilar soils included in mapping are small areas of Lynn Haven and Surrency soils that are also in depressions. These soils are mineral and have a loamy surface layer with a high content of organic matter. Individual areas of inclusions are smaller than 5 acres in size.

A seasonal high water table is above the surface of these soils for 6 to 9 months during most wet periods. It

major water-control system is used.

These soils have severe limitations for all urban uses and for recreational development, such as playgrounds, picnic areas, and paths and trails. The flooding, ponding, and excess humus are the main limitations. They are very difficult to overcome. Careful consideration should be given before using areas of this map unit for these purposes.

The Pamlico and Dorovan soils are in capability

available water capacity is high in the Pamlico soil and very high in the Dorovan soil. Permeability is moderately rapid or moderate in the Pamlico soil and moderate in the Dorovan soil.

These soils are in the Swamps Hardwoods ecological plant community. In most areas, the natural vegetation is pondcypress, baldcypress, pond pine, red maple, blackgum, Carolina ash, and water oak. The understory is mainly greenbriar, fetterbush lyonia, lizards tail, cordgrass,

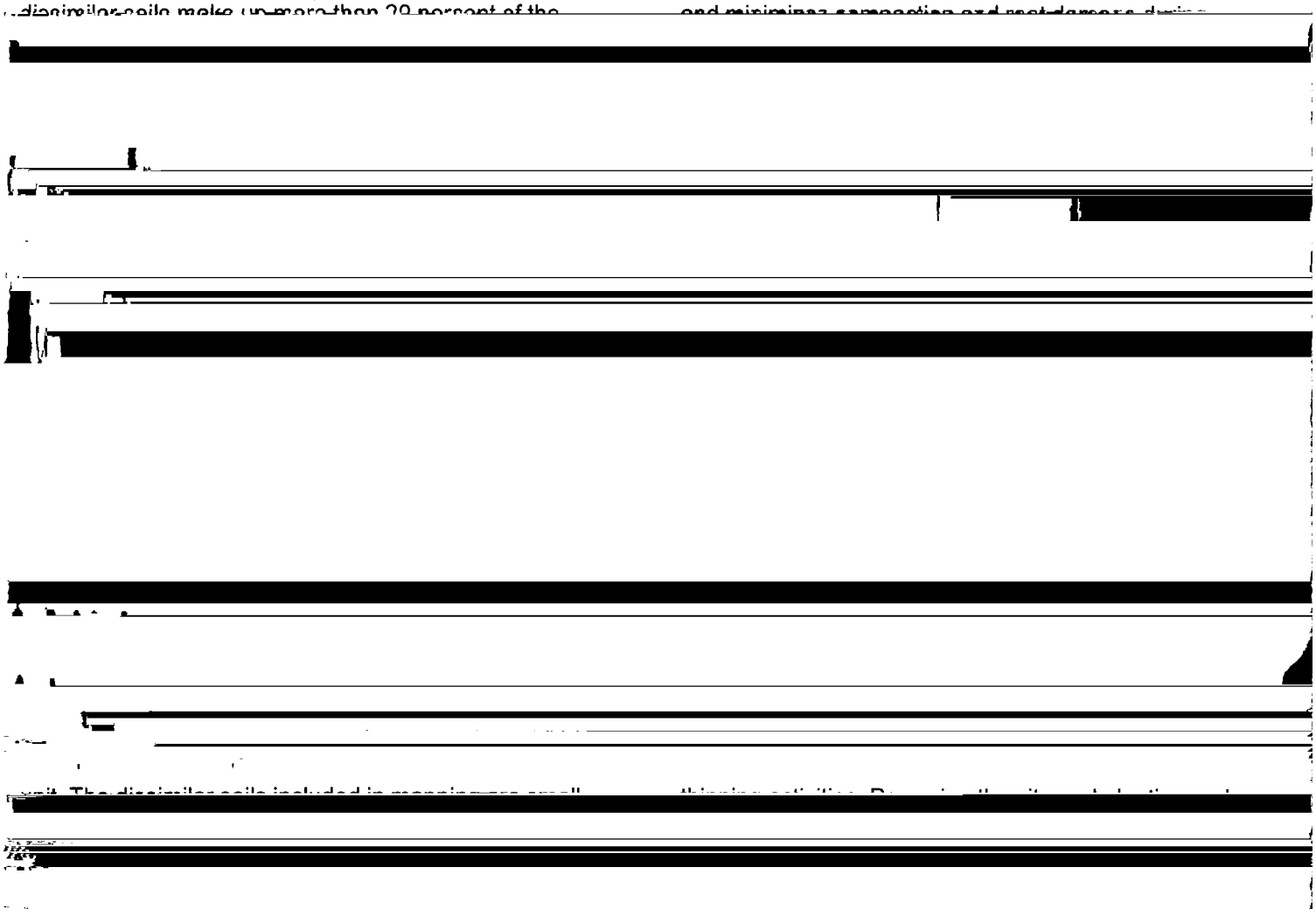
is fine sand, and it extends to a depth of 60 inches. The upper 9 inches is black, the next 9 inches is dark brown, and the lower 18 inches is brown. The lower part of the subsoil is grayish brown sandy clay loam to a depth of 75 inches and light brownish gray sandy loam to a depth of 80 inches or more.

In 80 percent of areas mapped as Meadowbrook-Chaires complex, Meadowbrook and Chaires soils and similar soils make up 80 to 100 percent of the map unit. The similar soils include soils that have a loamy subsoil within a depth of 40 inches and soils that have limestone rock within a depth of 80 inches. Generally, the mapped areas are about 65 percent Meadowbrook soil and similar soils and about 25 percent Chaires soil and similar soils. The components of this map unit occur as areas so intricately intermingled that it was not practical to map them separately at the scale used in mapping. The proportions and patterns of Meadowbrook and Chaires soils and similar soils are relatively consistent in most mapped areas.

In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent of the

This map unit is well suited to tame pasture if water is properly controlled. If properly managed, a good pasture of grass or a grass-legume mixture can be established. Water-control measures are needed to remove the excess surface water during long, rainy periods. Irrigation is needed for the best yields of white clover or other adapted, shallow-rooted pasture plants during dry periods. Establishing an optimum plant population, applying fertilizer and lime, and controlling grazing help to maintain a good plant cover and increase the production of forage. Careful management is required to maintain good grazing. This includes the establishment of a proper plant population, applications of fertilizer and lime, and controlled grazing.

The potential productivity for pine trees is high for the Meadowbrook soil and moderately high for the Chaires soil. Slash pine and loblolly pine are suitable for planting. The equipment limitation, seedling mortality, and plant competition are management concerns. Seasonal wetness is the main limitation. The use of equipment that has large tires or tracks helps to overcome the equipment limitation and minimizes compaction and root damage during



14—Leon fine sand

This soil is nearly level and poorly drained. It is on broad areas in the flatwoods. The mapped areas are irregular in shape and range from about 25 to more than 3,000 acres in size. The slope is nearly smooth to concave and ranges from 0 to 2 percent.

Typically, the surface layer of the Leon soil is black fine sand about 4 inches thick. The subsurface layer is light brownish gray fine sand to a depth of 10 inches. The upper 7 inches of the subsoil is dark reddish brown fine sand, and the lower 7 inches is yellowish brown fine sand. Below this is 20 inches of light gray fine sand, and the next 19 inches is light brownish gray fine sand. Another subsoil is between a depth of 63 and 80 inches. It is very dark brown fine sand.

In 80 percent of areas mapped as Leon fine sand, Leon and similar soils make up 80 to 100 percent of the map unit. The similar soils include Lynn Haven and Wesconnett fine sand. Soils that have dissimilar characteristics make up about 0 to 20 percent of the map unit. In 0 to 20 percent of the mapped areas, the dissimilar soils make up

control erosion. Seedbed preparation should include planting on beds. Fertilizer and lime should be applied according to the needs of the crops.

This soil is well suited to tame pasture. Improved bermudagrass, improved bahiagrass, and clover are well adapted to areas of this soil, and they grow well if properly managed. A water-control system is needed to remove the excess surface water during heavy rains. To obtain high yields, regular applications of fertilizer are needed. Grazing should be controlled to maintain the vigor of plants.

The potential productivity of this soil for pine trees is moderately high. Slash pine and longleaf pine are suitable for planting. The timely use of site preparation practices, such as harrowing and bedding, help to establish seedlings, reduce the seedling mortality rate, and increase early growth. Chopping and bedding also reduce the debris, control competing vegetation, and facilitate planting operations. Using field machinery that is equipped with large tires or tracks helps to overcome the equipment limitation, reduces soil compaction, and reduces the damage to roots during thinning operations. A logging

are irregular in shape and range from about 10 to more than 100 acres in size.

Typically, the surface layer of the Wesconnett soil is black mucky fine sand about 14 inches thick. The upper part of the subsoil is fine sand, and it extends to a depth of 28 inches. The first 7 inches is very dark gray, and the lower 7 inches is dark brown. Below this depth is pale brown fine sand to a depth of 45 inches. The lower part of the subsoil is very dark gray fine sand to a depth of 61 inches. The underlying material is light gray fine sand to a depth of 80 inches or more.

Typically, the surface layer of the Lynn Haven soil is black mucky fine sand about 13 inches thick. The subsurface layer is light brownish gray fine sand to a depth of 19 inches. The upper part of the subsoil is black fine sand to a depth of 27 inches and dark yellowish brown to a depth of 34 inches. Below this to a depth of 52 inches is a layer of yellowish brown fine sand. The lower part of the subsoil to a depth of 80 inches or more is dark reddish brown fine sand.

In 80 percent of areas mapped as Wesconnett and Lynn Haven soils, depressional, Wesconnett and Lynn Haven soils and similar soils make up 80 to 100 percent of the map unit. The similar soils include soils that are similar to the Wesconnett soil but are underlain with loamy material. Generally, the mapped areas are about 55 percent Wesconnett soil and similar soils and about 43 percent Lynn Haven and similar soils. Each of the soils does not necessarily occur in every mapped area. The proportions and patterns of Wesconnett and Lynn Haven soils and similar soils varies from area to area. Areas of individual soils are large enough to be mapped separately. Because of the present and predicted land uses, however, they were mapped as one unit.

In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent of the unit. The dissimilar soils included in mapping are small areas of Pamlico and Dorovan soils. Individual areas of inclusions are smaller than 5 acres in size. Pamlico and Dorovan soils are in similar landscape positions.

A seasonal high water table is above the surface of these soils for 6 to 9 months during wet periods in most years. It recedes to a depth of more than 12 inches during dry periods. The available water capacity is moderate in the Wesconnett soil and high in the Lynn Haven soil. Permeability is moderate to moderately rapid.

These soils are in the Swamps Hardwoods ecological [illegible]

tame pasture, and planted pine trees because of the prolonged wetness unless a major water-control system is used.

This map unit has severe limitations for all urban uses and recreational development, such as playgrounds, picnic areas, and paths and trails. The ponding and the sandy texture are the main limitations. They are very difficult to overcome. Careful consideration should be given before using areas of this map unit for these purposes.

The Wesconnett and Lynn Haven soils are in capability subclass VIIw, and the woodland ordination symbol is 2W.

16—Tooles fine sand

This nearly level, poorly drained soil is on low flatwoods. The mapped areas are irregular in shape and range from about 10 to more than 150 acres in size. The slope is nearly smooth and ranges from 0 to 1 percent.

Typically, the surface layer of the Tooles soil is very dark brown fine sand about 6 inches thick. The subsurface layer is light brownish gray fine sand to a depth of 14 inches. The upper part of the subsoil is fine sand to a depth of 35 inches. The first 11 inches is yellowish brown, and the next 10 inches is light yellowish brown. The lower part of the subsoil is light brownish gray sandy clay loam to a depth of 50 inches, and below this depth is limestone bedrock.

In 95 percent of areas mapped as Tooles fine sand, Tooles and similar soils make up 80 to 100 percent of the map unit. The similar soils include Oaky and Meadowbrook soils.

Soils that have dissimilar characteristics make up about 0 to 20 percent of the map unit. In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent. Dissimilar soils included in mapping are small areas of Chaires and Clara soils. Individual areas of inclusions are smaller than 5 acres in size.

A seasonal high water table is at a depth of 6 to 18 inches for 1 to 3 months during wet periods in most years. It recedes to a depth of more than 24 inches during dry periods. The available water capacity is moderate. Permeability is slow.

This soil is in the North Florida Flatwoods ecological plant community. In most areas, the natural vegetation [illegible]

suited to many crops. A water-control system is needed to remove the excess surface water during wet periods and to provide water for subsurface irrigation during droughty periods. Row crops should be rotated with close-growing, soil-improving cover crops. Soil-improving cover crops and crop residue should be used to maintain the content of organic matter and to control erosion. Seedbed preparation should include planting on beds. Fertilizer and lime should be applied according to the needs of the crops.

This soil is well suited for tame pasture. Improved bermudagrass, improved bahiagrass, and clover are well adapted to this soil. They grow well if properly managed. A water-control system is needed to remove the excess surface water during heavy rains. To obtain high yields, regular applications of fertilizer are needed. Grazing should be controlled to maintain the vigor of plants.

The potential productivity of this soil for pine trees is high. Slash pine, longleaf pine, and loblolly pine are suitable for planting. The timely use of site preparation practices, such as harrowing and bedding, help to establish seedlings, reduce the seedling mortality rate, and increase early growth. Chopping and bedding also reduce the debris and competing vegetation and facilitate planting operations. Using field machinery that is equipped with large tires or tracks helps to overcome the equipment limitation, reduces soil compaction, and reduces the damage to roots during thinning operations. A logging system that leaves residual biomass distributed over the site helps to maintain the content of organic matter and the soil fertility. Applications of fertilizer can provide an excellent growth response.

This soil has severe limitations for dwellings without basements, local roads and streets, and septic tank absorption fields. The seasonal high water table, poor

18—Surrency, Plummer, and Clara soils, depressional

These very poorly drained, nearly level soils are in depressions in the flatwoods. These soils do not occur in a regular, repeating pattern on the landscape. The slope is smooth or slightly concave and ranges from 0 to 1 percent. Individual areas are irregular in shape and range from about 10 to more than 100 acres in size.

Typically, the surface layer of the Surrency soil is black mucky fine sand about 10 inches thick. The subsurface layer is fine sand to a depth of 28 inches. The upper 6 inches is light brownish gray, and the lower 12 inches is light gray. The subsoil is light grayish brown sandy loam to a depth of 45 inches and grayish brown sandy clay loam to a depth of 80 inches or more.

Typically, the surface layer of the Plummer soil is black fine sand about 8 inches thick. The subsurface layer is fine sand to a depth of 50 inches. The upper 10 inches is light brownish gray, and the lower 32 inches is light gray. The subsoil is light grayish brown sandy loam to a depth of 55 inches and grayish brown sandy clay loam to a depth of 80 inches.

Typically, the surface layer of the Clara soil is black mucky fine sand about 9 inches thick. The subsurface layer is grayish brown fine sand to a depth of 29 inches. The subsoil is brown and yellowish brown fine sand to a depth of 45 inches. The underlying material is light gray fine sand.

In 80 percent of areas mapped as Surrency, Plummer, and Clara soils, depressional, Surrency, Plummer, and Clara soils and similar soils make up 80 to 100 percent of the map unit. The similar soils include soils that are similar to Meadowbrook soils but have a high base saturation. Generally, the mapped areas are about 34 percent

Figure 10.—An area of Surrency, Plummer, and Clara soils, depressional. Areas of this map unit are not suited to most agricultural and urban uses because of the ponding and the wetness.

years. It recedes to a depth of more than 20 inches during dry periods. The available water capacity is moderate. Permeability is moderate to moderately rapid in the Surrency soil, moderately slow to moderate in the Plummer soil, and rapid in the Clara soil.

These soils are in the Swamps Hardwoods ecological plant community. In most areas, the natural vegetation consists of pondcypress, baldcypress, blackgum, sweetbay, red maple, water oak, and pond pine. The understory is mainly cordgrass, bullrush, button bush, elderberry, water hyacinth, arrowhead, and dollarwort.

These soils have severe limitations for cultivated crops, tame pasture, and planted pine trees because of the prolonged wetness (fig. 10) unless a major water-control system is used.

These soils have severe limitations for all urban uses and recreational development, such as playgrounds, picnic areas, and paths and trails. The ponding, the sandy texture, and the poor filtration in some areas are the main limitations. They are very difficult to overcome. Careful

consideration should be given before using areas of this map unit for these purposes.

The Surrency and Plummer soils are in capability subclass VIw, and the woodland ordination symbol is 2W. The Clara soil is in capability subclass VIIw, and the woodland ordination symbol is 2W.

during droughty periods. Row crops should be rotated with close-growing, soil-improving cover crops. Soil-improving cover crops and crop residue should be used to maintain the content of organic matter and to control erosion. Seedbed preparation should include planting on beds. Fertilizer and lime should be applied according to the needs of the crops.

This soil is well suited to tame pasture. Improved bermudagrass, improved bahiagrass, and clover are well adapted to this soil. They grow well if properly managed. A water-control system is needed to remove the excess surface water during heavy rains. To obtain high yields, regular applications of fertilizer are needed. Grazing should be controlled to maintain the vigor of plants.

The potential productivity of this soil for pine trees is high. Slash pine, loblolly pine, and longleaf pine are suitable for planting. The timely use of site preparation practices, such as harrowing and bedding, help to establish seedlings, reduce the seedling mortality rate,

20—Plummer fine sand

This nearly level, poorly drained soil is on low flatwoods and in depressions. The slope is nearly smooth to concave and ranges from 0 to 2 percent. The mapped areas are irregular in shape and range from about 10 to more than 50 acres in size.

Typically, the surface layer of the Plummer soil is black fine sand to a depth of 7 inches. The subsurface layer is fine sand to a depth of 55 inches. The upper 7 inches is grayish brown, the next 8 inches is gray, and the lower 33

regular, repeating pattern on the landscape. The slope is smooth or slightly concave and ranges from 0 to 1 percent. Individual areas are irregular in shape and range from about 10 to more than 100 acres in size.

Typically, the surface layer of the Rawhide soil is black mucky fine sand about 6 inches thick. The subsoil is sandy clay loam to a depth of 80 inches or more. The upper 12 inches is black, the next 8 inches is very dark gray, and below this, to a depth of 80 inches or more, is gray.

Typically, the surface layer of the Harbeson soil is black mucky fine sand about 18 inches thick. The subsurface layer is fine sand to a depth of 55 inches. The upper 18 inches is light brownish gray, and the lower 19 inches is light gray. The subsoil is gray sandy clay loam to a depth of 80 inches or more.

In 80 percent of areas mapped as Rawhide and Harbeson soils, depressional, Rawhide and Harbeson soils and similar soils make up 80 to 100 percent of the map unit. The similar soils include soils that are similar to the Rawhide soil but are underlain by clayey material. Generally, the mapped areas are about 55 percent Rawhide soil and similar soils and about 43 percent Harbeson and similar soils. Each of the soils does not occur necessarily in every mapped area. The proportions and patterns of Rawhide and Harbeson soils and similar soils varies from area to area. Areas of individual soils are large enough to be mapped separately. Because of the present and predicted land uses, however, they were mapped as one unit.

In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent of the unit. The dissimilar soils included in mapping are small areas of Pamlico and Dorovan soils. Individual areas of inclusions are smaller than 5 acres in size and are in similar landscape positions.

A seasonal high water table is above the surface of these soils for 6 to 9 months during wet periods in most years. It recedes to a depth of more than 12 inches during dry seasons. The available water capacity is moderate. Permeability is slow or very slow in the Rawhide soil and moderately slow or moderate in the Harbeson soil.

These soils are in the Swamps Hardwoods ecological plant community. In most areas, the natural vegetation consists of pondcypress, baldcypress, pond pine, laurel oak, water oak, sweetgum, Atlantic whitecedar, blackgum, sweetbay, and red maple. The understory is mainly cordgrass, bullrush, button bush, elderberry, water hyacinth, arrowhead, and dollarwort.

These soils have severe limitations for cultivated crops, tame pasture, and planted pine trees because of the prolonged wetness unless a major water-control system is used.

These soils have severe limitations for all urban uses picnic areas, and paths and trails. The ponding is the main limitation, and it is very difficult to overcome. Careful consideration should be given before using areas of this map unit for these purposes.

The Rawhide and Harbeson soils are in capability subclass VIIw, and the woodland ordination symbol is 2W.

26—Ridgewood-Hurricane complex, 0 to 5 percent slopes

These soils are nearly level to gently sloping and are somewhat poorly drained. They are on low uplands. The mapped areas are irregular in shape and range from about 20 to more than 150 acres in size. The slope is nearly smooth to convex.

Typically, the surface layer of the Ridgewood soil is very dark gray fine sand about 6 inches thick. The underlying material is fine sand, and it extends to a depth of 80 inches or more. The upper 12 inches is brown, the next 21 inches is very pale brown, and the lower 41 inches is light gray.

Typically, the surface layer of the Hurricane soil is very dark gray fine sand about 5 inches thick. The subsurface layer is fine sand, and it extends to a depth of 51 inches. The upper 11 inches is grayish brown, the next 9 inches is brown, and the next 26 inches is pale brown. The subsoil is fine sand, and it extends to a depth of 80 inches or more. The upper 4 inches is dark brown, the next 11 inches is dark reddish brown, and the lower 14 inches is black.

In 80 percent of areas mapped as Ridgewood-Hurricane complex, 0 to 5 percent slopes, Ridgewood and Hurricane soils and similar soils make up 80 to 100 percent of the map unit. Generally, the mapped areas are about 65 percent Ridgewood and similar soils and about 26 percent Hurricane and similar soils. The components of this map unit are so intricately intermingled that it was not practical to map them separately. The proportions and patterns of Ridgewood and Hurricane soils and similar soils are relatively consistent in most delineations of the map unit.

Soils that have dissimilar characteristics make up about 0 to 20 percent of the map unit. In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent of the unit. The dissimilar soils included in mapping are small areas of Albany, Blanton, Leon, Mandarin, and Ortega soils. Individual areas of inclusions are smaller than 5 acres in size. Albany and Blanton soils have a loamy subsoil, and Blanton soils are moderately well drained. Mandarin and Leon soils have a subsoil between a depth of 20 to 30 inches, and Leon soils are poorly drained. Ortega soils are moderately well drained and are on the higher parts of the landscape.

inches for 1 to 3 months during wet periods in most years.

main limitations. Deep drainage reduces the wetness. If

percent. The dissimilar soils included in mapping are small areas of Blanton, Leon, Mandarin, and Ortega soils. Individual areas of inclusions are smaller than 5 acres in size. Mandarin and Leon soils have an organic-coated subsoil between a depth of 20 to 30 inches. Leon soils are [illegible] and they are on the lower parts of the

overcome by harvesting when the soils are moist. Seedling mortality, which is caused by droughtiness, can be partially reduced by increasing the tree planting rate and the planting depth. Plant competition can be controlled by site preparation practices, such as chopping or controlled burning. A harvesting system that

percent of the map unit. The similar soils include soils that are similar to the Clara and Meadowbrook soils but have an organic-coated subsoil. Generally, the mapped areas

29—Fluvaquents, frequently flooded

These very poorly drained, nearly level soils are on

31—Chaires, low-Meadowbrook complex

These poorly drained, nearly level soils are in low, broad areas on the flatwoods. The Meadowbrook soil is in the lower areas. The soils occur in a regular, repeating pattern on the landscape. The slope is smooth or slightly concave and ranges from 0 to 2 percent. Individual areas are irregular in shape and are more than 100 acres in size.

Typically, the surface layer of the Chaires soil is black fine sand about 6 inches thick. The subsurface layer is light brownish gray fine sand to a depth of 23 inches. The upper part of the subsoil is organic-coated fine sand, and it extends to a depth of 32 inches. The upper 4 inches is black, and the lower 5 inches is dark brown. Below this depth is a layer of brown fine sand to a depth of 46 inches. The lower part of the subsoil is grayish brown sandy clay loam to a depth of 65 inches and gray sandy clay loam to a depth of 80 inches.

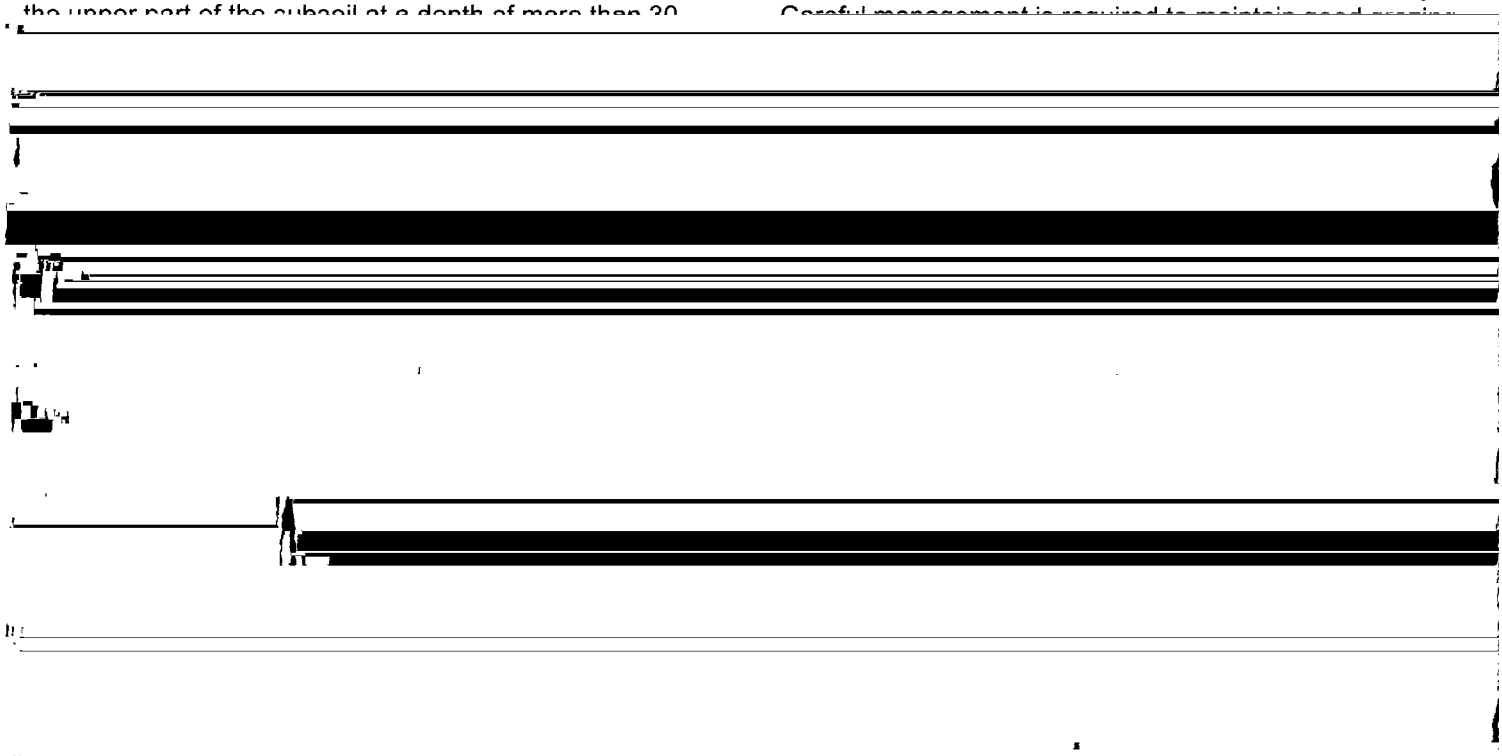
Typically, the surface layer of the Meadowbrook soil is black fine sand about 7 inches thick. The subsurface layer is fine sand, and it extends to a depth of 45 inches. The upper 10 inches is gray, and the lower 28 inches is light gray. The subsoil is gray fine sandy loam to a depth of 70 inches, and the lower part of the subsoil is light gray sandy clay loam to a depth of 80 inches or more.

In 80 percent of areas mapped as Chaires, low-Meadowbrook complex, Chaires and Meadowbrook soils and similar soils make up 80 to 100 percent of the map unit. The similar soils include soils that have limestone bedrock within a depth of 60 inches and soils that have the upper part of the subsoil at a depth of more than 20

These soils are in the North Florida Flatwoods ecological plant community. In most areas in the flatwoods, the natural vegetation includes slash pine, loblolly pine, longleaf pine, live oak, laurel oak, scattered sweetgum, red maple, and water oak. The understory consists of gallberry, grape, greenbrier, lopsided indiangrass, broomsedge, bluestem, scattered saw palmetto, hairy panicum, pineland threeawn, waxmyrtle, gallberry, panicum, fetterbush lyonia, brackenfern, and little bluestem. Most areas of this map unit are used for planted pine production or pasture.

These soils have severe limitations for cultivated crops because of the wetness and low natural fertility. However, they are suited to most vegetable crops if they are intensively managed, including the use of a water-control system that removes excess water rapidly and provides for subsurface irrigation. Soil-improving crops and crop residue can protect the soils from erosion and maintain the content of organic matter. Seedbed preparation should include planting on beds. Fertilizer should be applied according to the needs of the crop.

This map unit is well suited to tame pasture if water is properly controlled. If properly managed, a good pasture of grass or a grass-legume mixture can be established. Water-control measures are needed to remove the excess surface water during long, rainy periods. Irrigation is needed for the best yields of white clover or other adapted, shallow-rooted pasture plants during dry periods. Establishing an optimum plant population, applying fertilizer and lime, and controlling grazing help to maintain a good plant cover and increase the production of forage. Careful management is required to maintain good grazing

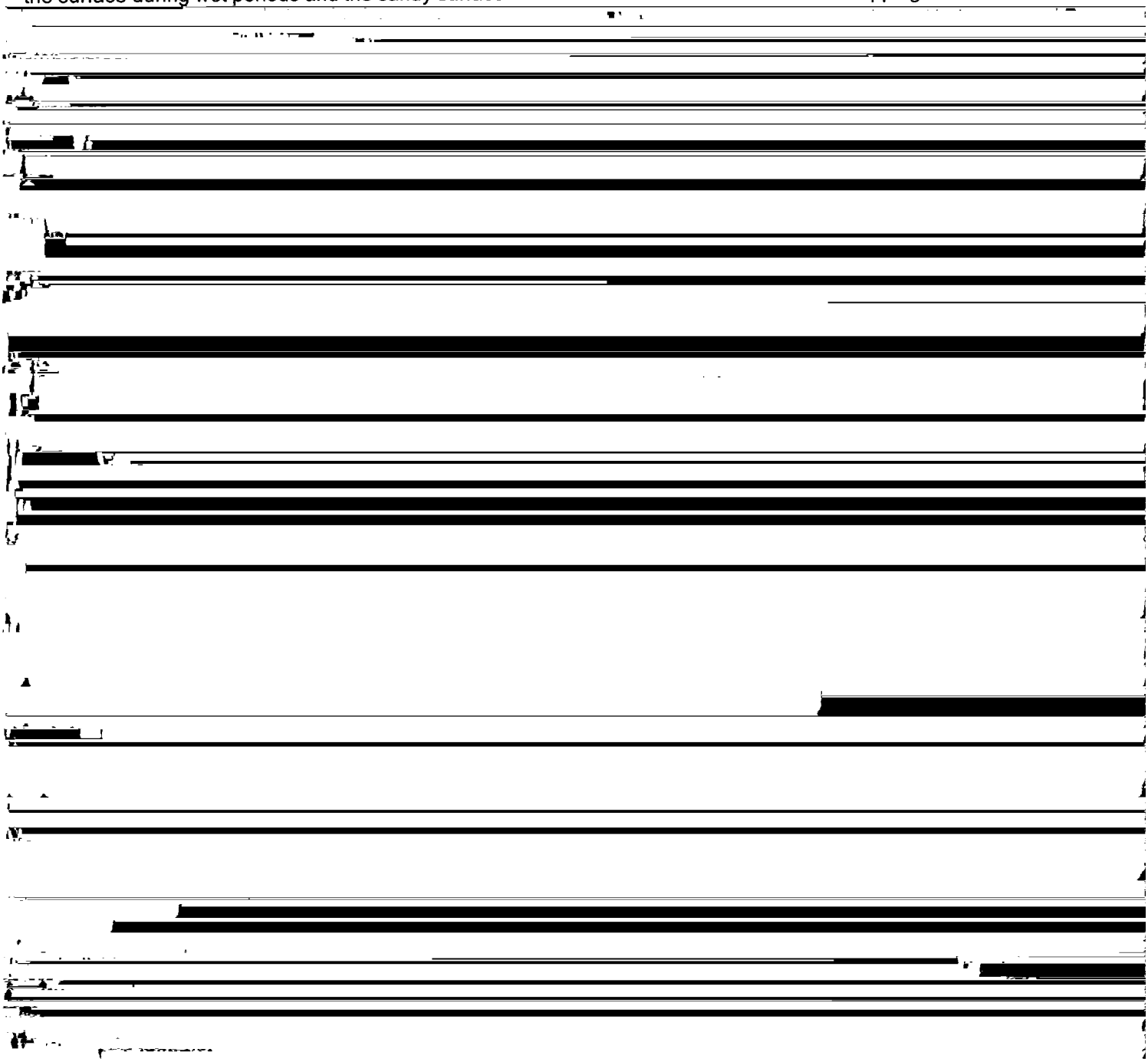


filtration, and slow percolation in parts of the map unit are the main limitations. Deep drainage reduces the wetness. Suitable fill material can be used to elevate building sites. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table and improve the percolation. Drainage and the use of suitable fill to elevate road beds minimizes wetness in areas of road construction.

This map unit has severe limitations for recreational development, such as playgrounds, picnic areas, and paths and trails. The seasonal high water table that is near the surface during wet periods and the sandy surface

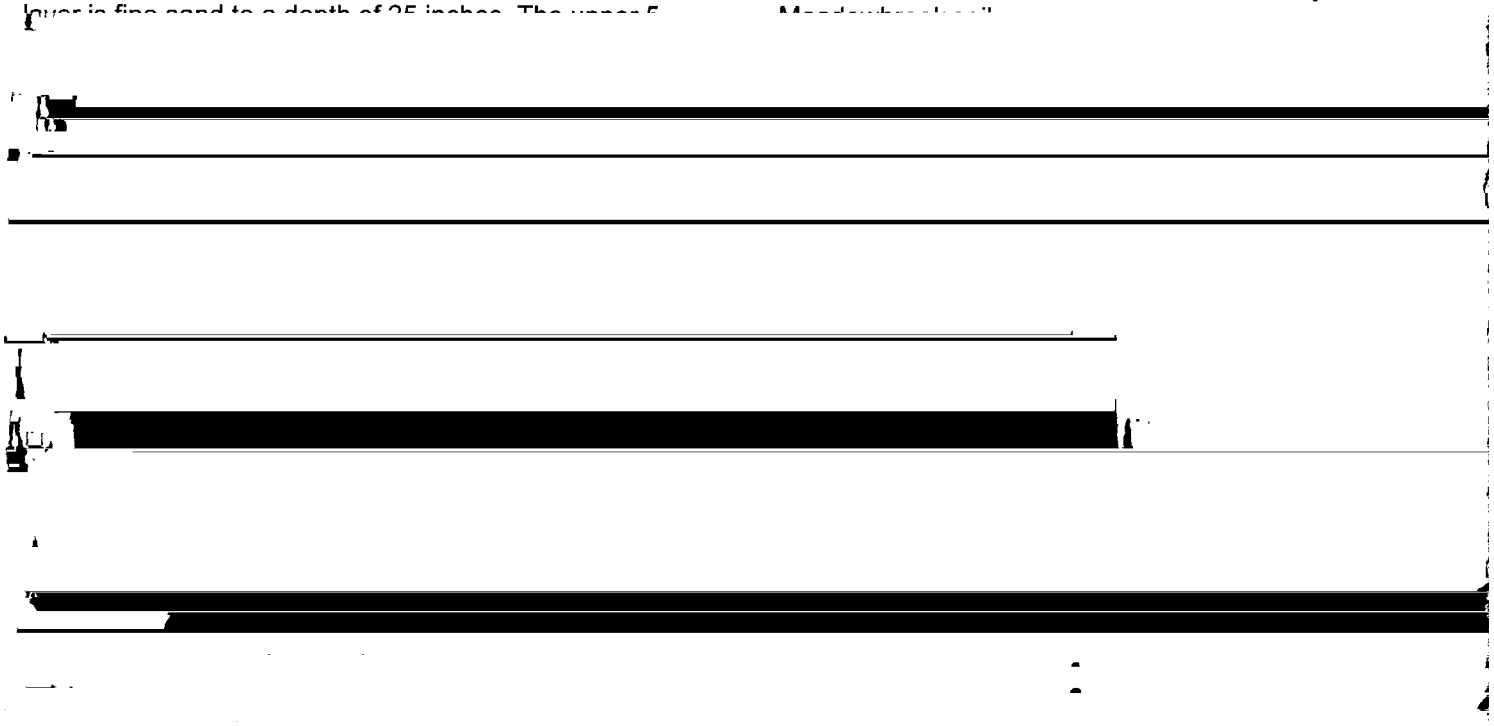
base saturation. Generally, the mapped areas are about 65 percent Chaires soil and similar soils and about 33 percent Meadowbrook and similar soils. Each of the soils does not necessarily occur in every mapped area. The proportions and patterns of Chaires and Meadowbrook soils and similar soils varies from area to area. Areas of individual soils are large enough to be mapped separately. Because of the present and predicted land uses, however, they were mapped as one unit.

In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent of the unit. The dissimilar soils included in mapping are small areas of



dark gray fine sand about 5 inches thick. The subsurface layer is fine sand to a depth of 25 inches. The upper 5

in the Tooles soil, and moderate or moderately slow in the Meadowbrook soil.



inches is dark brown, the next 10 inches is pale brown, and the lower 5 inches is very pale brown. The subsoil is light gray sandy clay loam to a depth of 42 inches. Below this depth is limestone bedrock.

Typically, the surface layer of the Meadowbrook, limestone substratum, soil is very dark gray fine sand about 6 inches thick. The subsurface layer is fine sand, and it extends to a depth of 42 inches. The upper 15 inches is dark grayish brown, and the lower 21 inches is pale brown. The subsoil is light grayish brown sandy clay loam to a depth of 55 inches. Below this depth is limestone bedrock.

Typically, the surface layer of the Rawhide soil is black mucky fine sand about 10 inches thick. The subsoil is sandy clay loam to a depth of 80 inches or more. The upper 15 inches is black, the next 10 inches is very dark gray, the next 10 inches is gray, and the lower 35 inches is light gray.

In 80 percent of areas mapped as Tooles-Meadowbrook, limestone substratum-Rawhide complex, frequently flooded, Tooles, Meadowbrook, limestone substratum, and Rawhide soils and similar soils make up 80 to 100 percent of the map unit. The similar soils include soils that are similar to the Tooles soil but have an organic subsoil within a depth of 30 inches and soils that do not have rock. Generally, the mapped areas are about 61 percent Tooles soil and similar soils, about 21 percent Meadowbrook, limestone substratum, soil and similar soils, and about 13 percent Rawhide soil and similar soils. The components of this map unit occur as areas so intricately intermingled that it was not

These soils are in the North Florida Flatwoods ecological plant community. In most areas on the flood plains, the natural vegetation includes slash pine, loblolly pine, longleaf pine, live oak, laurel oak, scattered sweetgum, blackgum, and water oak. Pondcypress, baldcypress, pond pine, scattered sweetgum, red maple, laurel oak, and water oak grow in the lower areas. The understory consists of gallberry, grape, greenbrier, lopsided indiangrass, chalky bluestem, scattered saw palmetto, hairy panicum, pineland threeawn, and little bluestem in flood-prone areas on the flatwoods. It consists of maidencane, St Johnswort, and various other water-tolerant grasses in the lower areas. Most areas of this map unit are used for the production of planted pine.

These soils have severe limitations for cultivated crops because of flooding, wetness, ponding in the lower areas, and low natural fertility. A major water-control system is needed before using areas of the map unit for crops.

This map unit is unsuited to tame pasture under natural conditions. If properly managed, a good pasture of grass or a grass-legume mixture can be established. Water-control measures are needed to remove the excess surface water during long, rainy periods. Irrigation is needed for the best yields of white clover or other adapted, shallow-rooted pasture plants during dry periods. Establishing an optimum plant population, applying fertilizer and lime, and controlling grazing help to maintain a good plant cover and increase the production of forage. Most of the lower areas are unsuited for tame pasture because of the difficulty in providing drainage. Careful management is required to maintain

This map unit has severe limitations for dwellings without basements, local roads and streets, and septic tank absorption fields. Flooding, wetness, poor filtration in areas, and slow percolation are the main limitations. Intensive flood-control measures and deep drainage reduce the wetness. Suitable fill material can be used to elevate building sites. Septic tank absorption fields can be mounded to maintain the system above the seasonal high water table and improve the percolation. Drainage and the use of suitable fill to elevate road beds minimizes wetness in areas of road construction.

This map unit has severe limitations for recreational development, such as playgrounds, picnic areas, and paths or trails. The flooding, wetness, the seasonal high water table that is near the surface during wet periods and is above the surface in the lower areas, and the sandy surface texture are severe limitations. Intensive flood-control measures and drainage are needed before using areas of this map unit for these purposes. Suitable topsoil fill material or resurfacing is needed to improve the trafficability.

The Tooles soil is in capability subclass Vw, and the woodland ordination symbol is 11W. The Meadowbrook, limestone substratum, soil is in capability subclass VIw, and the woodland ordination symbol is 11W. The Rawhide soil is in capability subclass VIIw, and the woodland ordination symbol is 2W.

34—Ortega fine sand, 0 to 5 percent slopes

This nearly level to gently sloping, moderately well drained soil is on uplands. The mapped areas are irregular in shape and range from about 50 to more than 150 acres in size. The slope is nearly smooth to convex.

soils have a loamy subsoil below a depth of 40 inches. Blanton soils are in landscape positions similar to those of the Ortega soil.

A seasonal high water table is at a depth of 48 to 60 inches in the Ortega soil for 1 to 3 months during wet periods in most years. It recedes to a depth of more than 60 inches during the dry periods. The available water capacity is low. Permeability is rapid throughout the soil.

This soil is in the Longleaf Pine-Turkey Oak Hills ecological plant community. In most areas, the natural vegetation includes slash pine, longleaf pine, loblolly pine, live oak, bluejack oak, post oak, and turkey oak. The understory consists mostly of lopsided indiangrass, hairy panicum, greenbriar, hawthorn, persimmon, fringe leaf paspalum, hairy tick clover, dwarf huckleberry, chalky bluestem, creepy bluestem, and pineland threeawn. Most areas of this soil are used for the production of pasture, crops, or planted pine.

This soil has severe limitations for cultivated crops because of droughtiness during dry periods. Plant nutrients leach rapidly. Corn, peanuts, soybeans, tobacco, and watermelons are crops that can be grown with intensive management and the use of good conservation practices. Using a crop rotation system that includes cover crops, returning crop residue to the soil, and properly applying fertilizer and lime are practices that are necessary for good yields. Irrigation is desirable during droughty periods. Soil blowing is a severe hazard if the topsoil is left unprotected (fig. 11).

This soil is moderately well suited to tame pasture. Deep-rooting grasses, such as improved bahiagrass and bermudagrass, are suited. Yields are generally reduced by periodic droughts. Careful management is required to maintain good grazing. This includes the establishment of

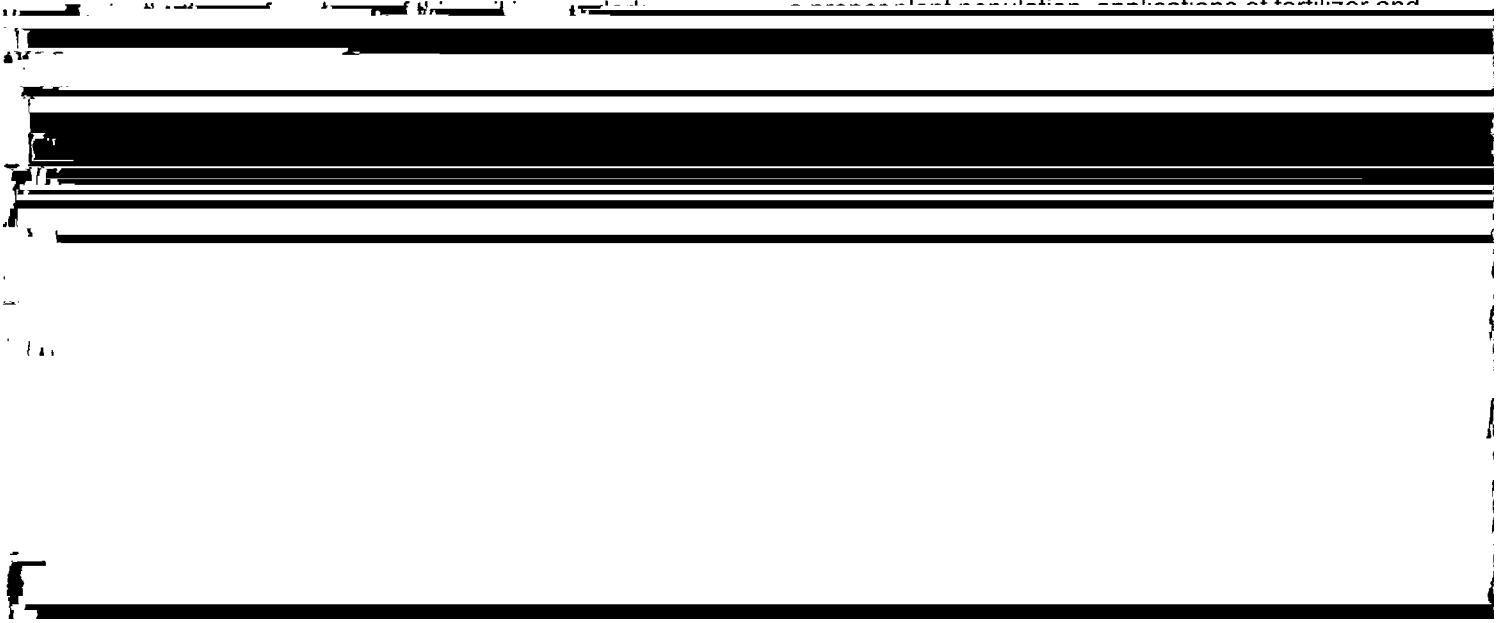


Figure 11.—An area of Ortega fine sand, 0 to 5 percent slopes. Strips of rye were planted to reduce the damage to crops caused by blowing sand.

basements and for local roads and streets. It has moderate limitations for septic tank absorption fields. In areas that have a concentration of homes and septic tank absorption fields, ground-water contamination can be a hazard because of poor filtration and the water table during wet periods. Some slight filling may be necessary in areas.

This map unit has severe limitations for recreational uses. The loose, sandy surface layer limits trafficability. Suitable topsoil fill material or some other type of surface stabilization is necessary to overcome this limitation. Soil blowing is a hazard. Establishing and maintaining a good vegetative cover or planting windbreaks can control soil blowing.

This Ortega soil is in capability subclass IIIs, and the woodland ordination symbol is 10S.

36—Wampee fine sand, 0 to 5 percent slopes

This nearly level to gently sloping, somewhat poorly drained soil is on low uplands. The mapped areas are irregular in shape and range from about 10 to more than 50 acres in size. The slope is nearly smooth to concave.

Typically, the surface layer of the Wampee soil is fine sand to a depth of 12 inches. The upper 6 inches is very dark gray, and the lower 6 inches is dark grayish brown. The upper part of the subsurface layer is brown fine sand to a depth of 21 inches, and the lower part is light brownish gray sand to a depth of 32 inches. The subsoil is sandy clay loam to a depth of 80 inches or more. The upper 23 inches is gray, and the lower 25 inches is light gray.

In 80 percent of areas mapped as Wampee fine sand, 0 to 5 percent slopes, Wampee soil and similar soils make up 80 to 100 percent of the map unit. The similar soils include soils are poorly drained and soils that have a low base saturation.

Soils that have dissimilar characteristics make up about 0 to 20 percent of the map unit. In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent of the unit. The dissimilar soils included in mapping are small areas of Albany and Plummer soils. Albany soils are sandy to a depth of more than 40 inches and have a low base saturation. Plummer soils are poorly drained, have a sandy epipedon more than 40 inches

inclusions are smaller than 5 acres in size. Albany and Plummer soils are on the lower parts of the landscape.

A seasonal high water table is at a depth of 12 to 36

the debris, control competing vegetation, and facilitate planting operations. Using field machinery that is equipped with large rubber tires or tracks helps to overcome the equipment limitation, reduces soil compaction, and reduces the damage to roots during thinning operations. A logging system that leaves residual biomass distributed over the site helps to maintain the content of organic matter and the soil fertility. Applications of fertilizer can provide an excellent growth response.

This soil has severe limitations for dwellings without basements, local roads and streets, and septic tank absorption fields. The seasonal high water table, slow percolation, poor filtration, and the sandy texture are the

areas of this soil are used as a septic tank absorption field, mounding of the field is needed. If the density of housing is moderate to high, community sewage systems

In 80 percent of areas mapped as Pantego and Surrency soils, depressional, Pantego and Surrency soils and similar soils make up 80 to 100 percent of the map unit. The similar soils include soils that are similar to the Pantego soil but are underlain by soft limestone material. Generally, the mapped areas are about 65 percent Pantego soil and similar soils and about 33 percent Surrency and similar soils. Each of the soils does not necessarily occur in every mapped area. The proportions and patterns of Pantego and Surrency soils and similar soils varies from area to area. Areas of individual soils are large enough to be mapped separately. Because of the present and predicted land uses, however, they were mapped as one unit.

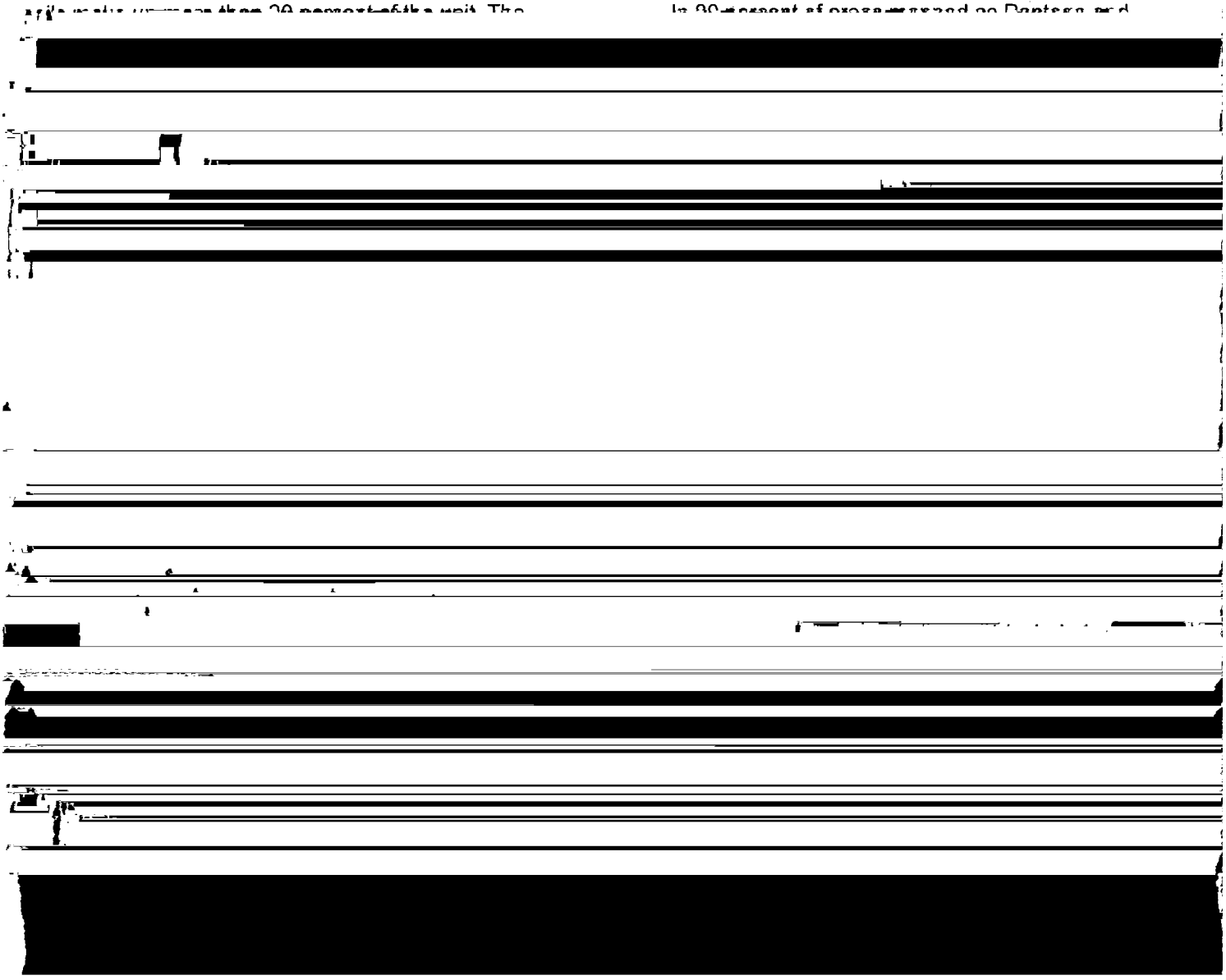
In 0 to 20 percent of the mapped areas, the dissimilar

are irregular in shape and range from about 20 to more than 100 acres in size.

Typically, the surface layer of the Pantego soil is black mucky loamy sand about 8 inches thick. The subsurface layer is sandy loam to a depth of 19 inches. The upper 6 inches is grayish brown, and the lower 5 inches is light brownish gray. The subsoil is gray sandy clay loam to a depth of 43 inches. Below this depth is light gray sandy clay loam to a depth of 80 inches or more.

Typically, the surface layer of the Surrency soil is black mucky fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of 32 inches. The upper 12 inches is light brownish gray, and the lower 14 inches is light gray. The subsoil is gray sandy clay loam to a depth of 80 inches or more.

In 80 percent of areas mapped as Pantego and



flooding and the prolonged wetness unless a major water-control system is used.

These soils have severe limitations for all urban uses and recreational development, such as playgrounds, picnic areas, and paths or trails. The flooding and wetness are the main limitations. They are very difficult to overcome. Careful consideration should be given before using areas of this map unit for these purposes.

The Pantego and Surrency soils are in capability subclass Vlw, and the woodland ordination symbol is 7W.

39—Eunola fine sand, 0 to 5 percent slopes

This nearly level to gently sloping, moderately well drained soil is on terraces. The mapped areas are irregular in shape and range from about 10 to more than 100 acres in size. The slope is nearly smooth to concave.

Typically, the surface layer of the Eunola soil is very dark grayish brown fine sand to a depth of 7 inches. The subsurface layer is pale brown loamy fine sand to a depth of 18 inches. The upper part of the subsoil is yellowish brown sandy clay loam to a depth of 24 inches. The next 3 inches is light yellowish brown sandy clay loam. The lower part of the subsoil is grayish brown sandy clay to a depth of 35 inches. The next 15 inches is light brownish gray sandy clay. The next 8 inches is grayish brown sandy clay loam. The next 10 inches is brown loamy sand, and the lower 12 inches is pale brown sand.

In 80 percent of areas mapped as Eunola fine sand, Eunola soil and similar soils make up 80 to 100 percent of the map unit. The similar soils are similar to the Eunola soil except the subsoil is loamy or clayey to a depth of 80 inches or more.

Soils that have dissimilar characteristics make up about 0 to 20 percent of the map unit. In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent. The dissimilar soils included with these soils in mapping are small areas of Blanton and Ortega soils. Blanton soils are sandy to a depth of 40 to 79 inches. Ortega soils are sandy to a depth of more than 80 inches.

areas of this soil are used for the production of planted pine or pasture.

This soil has moderate limitations for cultivated crops because of the wetness. With a good water-control system and soil-improving measures, this soil is suited to many crops. A water-control system is needed to remove the excess surface water during wet periods and to provide water for subsurface irrigation during droughty periods. Row crops should be rotated with close-growing, soil-improving cover crops. Soil-improving cover crops and crop residue should be used to maintain the content of organic matter and to control erosion. Seedbed preparation should include planting on beds. Fertilizer and lime should be applied according to the needs of the crops.

This soil is well suited to tame pasture. Improved bermudagrass, improved bahiagrass, and clover are well adapted to this soil. They grow well if properly managed. A water-control system is needed to remove the excess surface water during heavy rains. To obtain high yields, regular applications of fertilizer are needed. Grazing should be controlled to maintain the vigor of plants.

The potential productivity of this soil for pine trees is high. Loblolly pine and slash pine are suitable for planting. The timely use of site preparation practices, such as harrowing and bedding, help to establish seedlings, reduce the seedling mortality rate, and increase early growth. Chopping and bedding also reduce the debris, control competing vegetation, and facilitate planting operations. Using field machinery that is equipped with large tires or tracks helps to overcome the equipment limitation, reduces soil compaction, and reduces the damage to roots during thinning operations. A logging system that leaves residual biomass distributed over the site helps to maintain the content of organic matter and the soil fertility. Applications of fertilizer can provide an excellent growth response.

This soil has severe limitations for dwellings without basements and local roads and streets. It has severe limitations for septic tank absorption fields. The seasonal high water table is the main limitation. Deep drainage

41—Meadowbrook and Harbeson soils, depressional

These very poorly drained, nearly level soils are in depressions. The soils do not occur in a regular, repeating pattern on the landscape. The slope is smooth or slightly concave and ranges from 0 to 1 percent. Individual areas are irregular in shape and range from about 20 to more than 100 acres in size.

Typically, the surface layer of the Meadowbrook soil is black mucky fine sand about 6 inches thick. The subsurface layer is gray fine sand to a depth of 45 inches. The subsoil is gray and light gray sandy clay loam to a depth of 80 inches or more.

Typically, the surface layer of the Harbeson soil is black mucky fine sand about 12 inches thick. The subsurface layer is fine sand to a depth of 63 inches. The upper 19 inches is dark grayish brown, the next 11 inches is grayish brown, and the lower 21 inches is light brownish gray. The subsoil is sandy clay loam to a depth of 80 inches or more. The upper 8 inches is gray, and the lower 9 inches is light gray.

In 80 percent of areas mapped as Meadowbrook and Harbeson soils, depressional, Meadowbrook and Harbeson soils and similar soils make up 80 to 100 percent of the map unit. The similar soils include soils that are similar to the Meadowbrook and Harbeson soils but

bullrush, button bush, elderberry, water hyacinth, arrowhead, and dollarwort.

These soils have severe limitations for cultivated crops, tame pasture, and planted pine trees because of the prolonged wetness unless a major water-control system is used.

These soils have severe limitations for all urban uses and recreational development, such as playgrounds, picnic areas, and paths and trails. The ponding, slow percolation, poor filtration, and sandy texture are the major limitations. They are very difficult to overcome. Careful consideration should be given before using areas of this map unit for these purposes.

The Meadowbrook and Harbeson soils are in capability subclass VIIw, and the woodland ordination symbol is 2W.

42—Sapelo, low-Clara-Surrency, depressional, complex

The poorly drained soils are on low flatwoods, and the very poorly drained soils are in small depressions in the flatwoods. The soils occur in a regular, repeating pattern on the landscape. The slope is smooth or concave and ranges from 0 to 2 percent. Individual areas are irregular in shape and are more than 100 acres in size.

Typically, the surface layer of the Sapelo soil is black fine sand about 8 inches thick. The subsurface layer is

Surrency soils and similar soils make up 80 to 100 percent of the map unit. The similar soils include Chaires and Meadowbrook soils and soils that are similar to the Sapelo soil but that have an upper organic-coated subsoil at a depth of more than 30 inches. Generally, the mapped areas are about 45 percent Sapelo, low, soil and similar soils, about 25 percent Clara soil and similar soils, and about 15 percent Surrency, depressional, soil and similar soils. The components of this map unit occur as areas so intricately intermingled that it was not practical to map them separately at the scale used in mapping. The proportions and patterns of the Sapelo, low, soil; the Clara soil; and the Surrency, depressional, soil and similar soils are relatively consistent in most mapped areas.

In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent of the unit. The dissimilar soils included in mapping are small areas of Chaires, Leon, and Pamlico, and other soils that have a sandy epipedon at a depth of 10 to 20 inches. Individual areas of inclusions are smaller than 5 acres in size. Chaires and Leon soils are on low flatwoods, and Pamlico soils are in depressions.

A seasonal high water table is at a depth of 0 to 6 inches in the Sapelo, low, soil and the Clara soil for 1 to 3 months during wet periods in most years. It recedes to a depth of more than 18 inches during dry periods. A seasonal high water table is above the surface of the Surrency, depressional, soil for 6 to 9 months during wet periods in most years. It recedes to a depth of more than 24 inches during dry periods. The available water capacity is low. Permeability is moderately slow to moderate in the Sapelo soil, rapid in the Clara soil, and moderate to moderately rapid in the Surrency soil.

Most areas of these soils are in the North Florida Flatwoods ecological plant community. In most areas in the flatwoods, the natural vegetation includes slash pine, loblolly pine, and water oak. Pondcypress, baldcypress, pond pine, red maple, and water oak are in the low areas [illegible]

maintain the content of organic matter. Seedbed preparation should include planting on beds. Fertilizer should be applied according to the needs of the crop. Most of the depressional areas are unsuited for cultivated crops.

Except for the depressional areas, this map unit is well suited to tame pasture if water is properly controlled. If properly managed, a good pasture of grass or a grass-legume mixture can be established. Water-control measures are needed to remove the excess surface water during long, rainy periods. Irrigation is needed for the best yields of white clover or other adapted, shallow-rooted pasture plants during dry periods. Establishing an optimum plant population, applying fertilizer and lime, and controlling grazing help to maintain a good plant cover and increase the production of forage. Careful management is required to maintain good grazing. This includes the establishment of a proper plant population, applications of fertilizer and lime, and controlled grazing. Most of the depressional areas are unsuited for tame pasture.

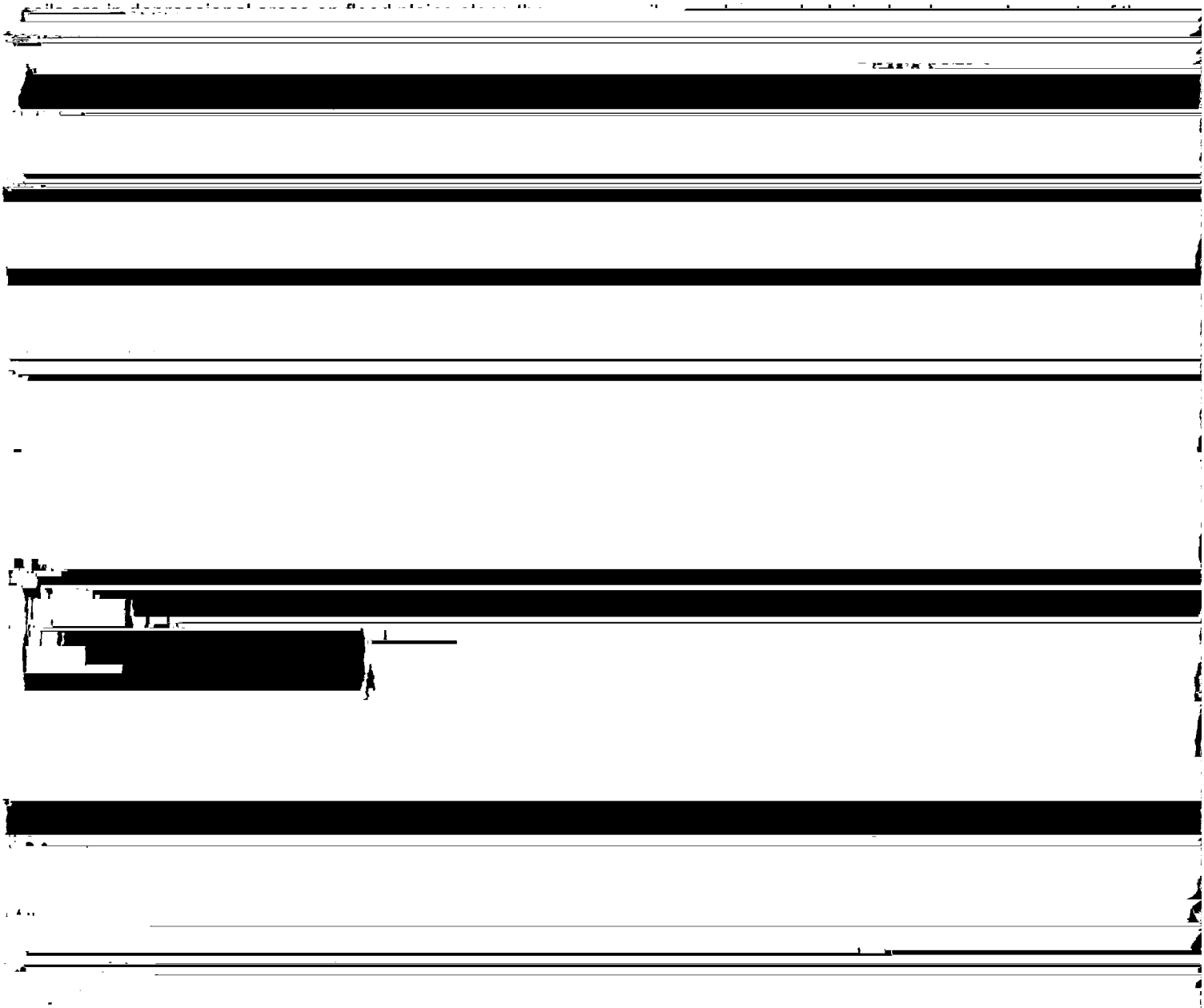
The potential productivity for pine trees is moderately high for the Sapelo and Clara soils. In areas of the Surrency soil in depressions, the productivity is very low. Slash pine is suitable for planting. The equipment limitation, the seedling mortality, and plant competition are management concerns. Seasonal wetness is the main limitation. The use of equipment that has large tires or tracks helps to overcome the equipment limitation and minimizes compaction and root damage during thinning activities. Preparing the site and planting and harvesting the trees during drier periods also help to overcome the equipment limitation. Good site preparation practices, such as harrowing and bedding, help to establish seedlings, control competing vegetation, and facilitate planting. Leaving all of the plant debris on the site helps to maintain the content of organic matter in the soils. The trees respond well to applications of fertilizer.

This map unit has severe limitations for dwellings [illegible]

The Sapelo soil is in capability subclass IVw, and the woodland ordination symbol is 10W. The Clara soil is in capability subclass VIw, and the woodland ordination symbol is 11W. The Surrency soil is in capability subclass VIw, and the woodland ordination symbol is 2W.

43—Garcon-Albany-Meadowbrook complex, 0 to 5 percent slopes, occasionally flooded

The nearly level to gently sloping, somewhat poorly drained soils are on terraces, and the very poorly drained



Suwannee River. Some areas are isolated by meandering stream channels. The mapped areas are irregular in shape and range from about 20 to more than 150 acres in

practical to map them separately. The proportions and patterns of Garcon, Albany, and Meadowbrook soils and similar soils are relatively consistent in most delineations of the map unit.

Soils that have dissimilar characteristics make up about 0 to 20 percent of the map unit. In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent of the unit. The dissimilar soils included in mapping are small areas of Blanton, Leon, Mandarin, and Ortega soils. Individual areas of inclusions are smaller than 5 acres in size. Mandarin and Leon soils have an organic-coated subsoil at a depth of 20 to 30 inches. Leon

landform. Blanton, Mandarin, and Ortega soils are moderately well drained and are on the higher parts of the landform.

[redacted]

areas of Blanton, Leon, Mandarin, and Ortega soils. Individual areas of inclusions are smaller than 5 acres in size. Mandarin and Leon soils have an organic-coated subsoil at a depth of 20 to 30 inches. Leon soils are also poorly drained and are on the lower parts of the landform. Blanton and Ortega soils are moderately well drained and

Deep-rooting grasses, such as improved bahiagrass and bermudagrass, are suited. Yields are generally reduced by periodic droughts. Careful management is required to maintain good grazing. This includes the establishment of a proper plant population, applications of fertilizer and lime, and controlled grazing. Irrigation is

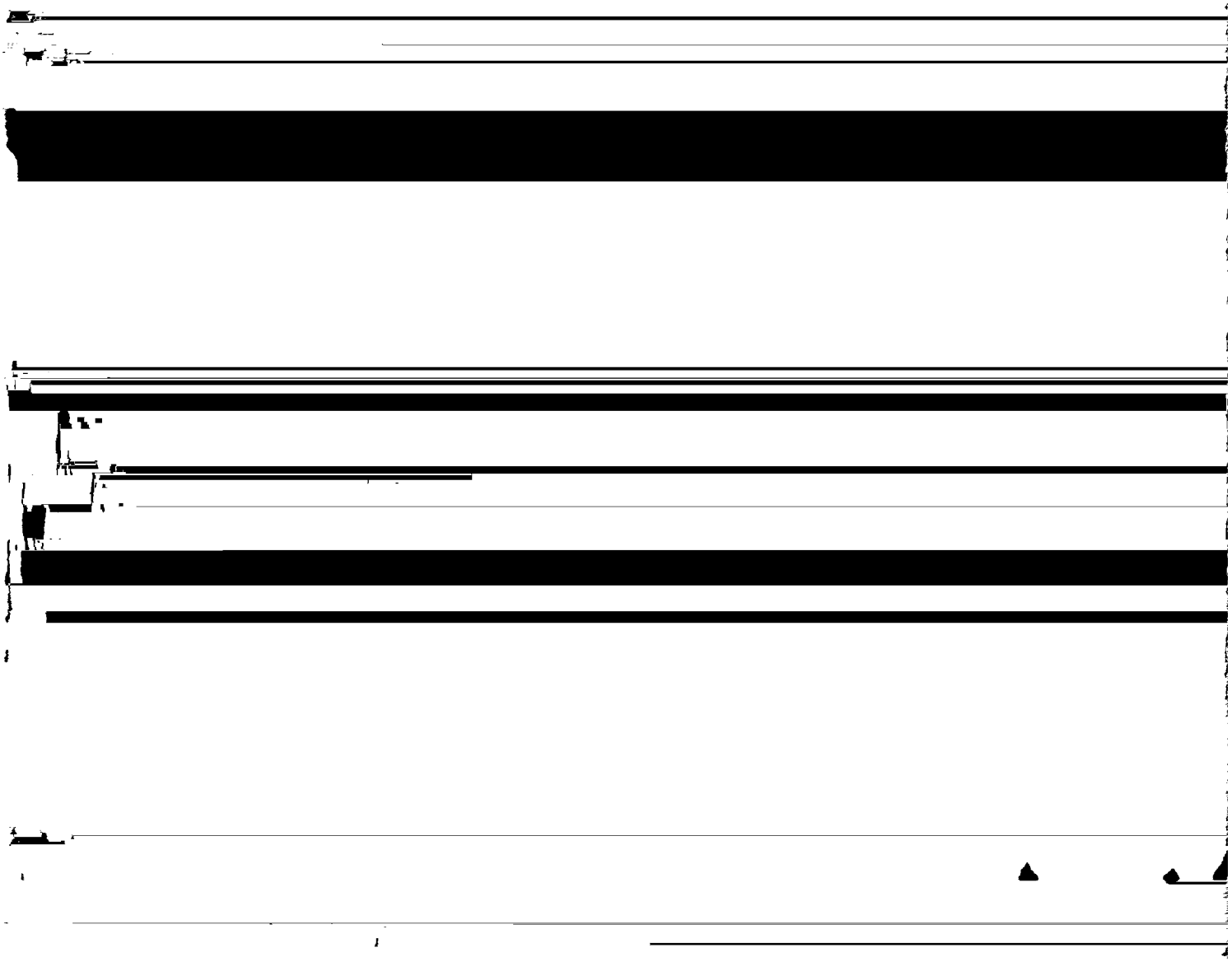
are on the higher parts of the landform.

A seasonal high water table is at a depth of 12 to 30 inches in the Albany soil and at a depth of 18 to 36 inches in the Ousley soil for 1 to 3 months during wet periods in

of grazing and of hay crops. If available during long dry periods, the use of irrigation water may be economically justifiable. These soils are not suited to shallow-rooting pasture plants because the soils cannot retain sufficient

depressions on the flood plain along the Steinhatchee River. Some areas are isolated by meandering stream channels. The mapped areas are irregular in shape and range from about 20 to more than 150 acres in size. The

the surface of the Rawhide soil for 6 to 9 months during wet periods in most years. It recedes to a depth of more than 12 inches during dry periods. Flooding occurs in areas of the Wekiva and Tooles soils several times during



to 2 percent.

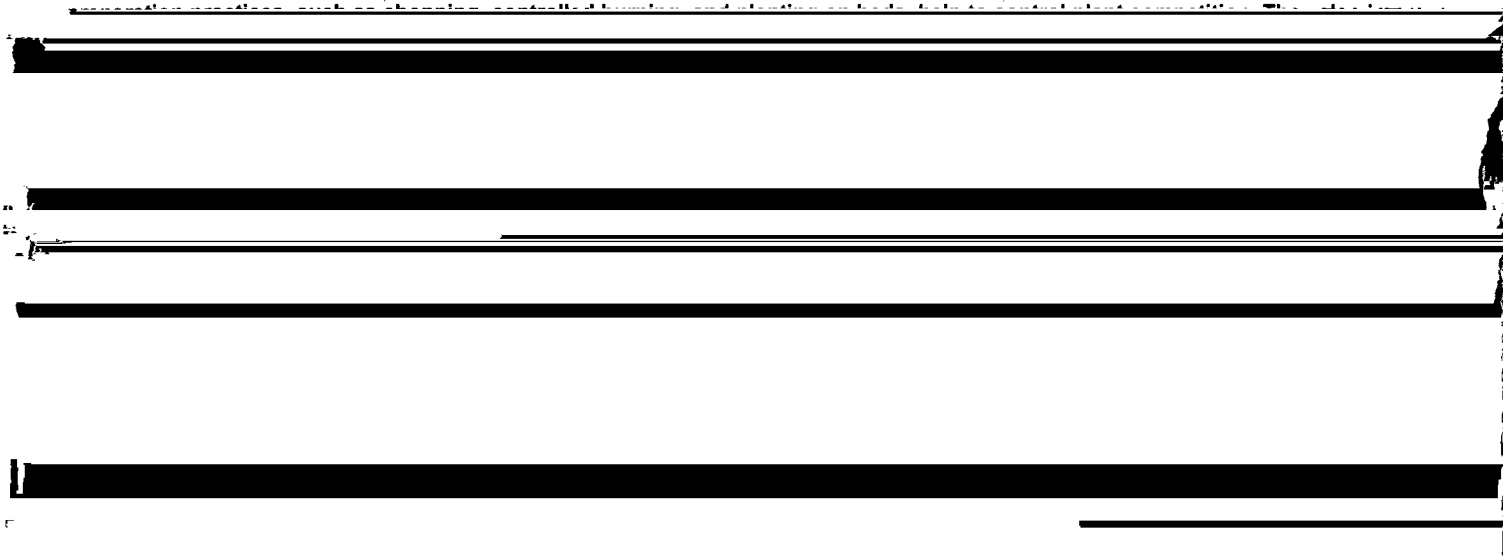
Typically, the surface layer of the Wekiva soil is very dark gray fine sand about 6 inches thick. The subsurface layer is grayish brown fine sand to a depth of 14 inches. The subsoil is brown sandy clay loam to a depth of 26 inches. Below this depth is limestone bedrock. Most areas of the Wekiva soil are on low ridges.

Typically, the surface layer of the Rawhide soil is black mucky fine sand about 8 inches thick. The subsoil is sandy clay loam, and it extends to a depth of 80 inches. The upper 22 inches is dark gray, the next 11 inches is grayish brown, the next 27 inches is light grayish brown, and the lower 12 inches is gray sandy loam. Most areas of the Rawhide soil are in depressions.

variable, and they are directly related to the intensity and frequency of rainfall. The flooding occurs for less than 7 days in areas of the Wekiva and Tooles soils and from a few weeks to several months in areas of the Rawhide soil. Excess water ponds in the lowest areas of the Rawhide soil. The available water capacity is low in the Wekiva and Tooles soils and moderate in the Rawhide soil. Permeability is moderately slow in the Wekiva soil, slow or very slow in the Rawhide soil, and slow in the Tooles soil.

These soils are in the Wetland Hardwood Hammocks ecological plant community. In most broad areas on the flood plain, the natural vegetation includes slash pine, loblolly pine, laurel oak, southern red cedar, sweetgum, and magnolia. Pondcypress, pond pine, baldcypress,

Figure 12.—Young slash pine in an area of Wekiva-Rawhide-Tooles complex, occasionally flooded. Plant competition is severe. Site



woodland ordination symbol is 8W. The Rawhide soil is in capability subclass VIIw, and the woodland ordination symbol is 2W. The Tooles soil is in capability subclass Vw, and the woodland ordination symbol is 10W.

46—Tooles-Rawhide complex, frequently flooded

These nearly level, poorly drained and very poorly drained soils are on the flood plains. Rawhide soils are in the lower areas on the flood plain. Some areas are isolated by meandering stream channels. The mapped areas are irregular in shape and range from about 100 to more than 250 acres in size. The slope is nearly smooth to convex and ranges from 0 to 1 percent.

Typically, the surface layer of the Tooles soil is black fine sand about 8 inches thick. The subsurface layer is light gray fine sand to a depth of 18 inches. The upper part of the subsoil is brownish yellow fine sand to a depth of 28 inches. The lower part of the subsoil is gray sandy clay loam to a depth of 43 inches. Below this depth is limestone bedrock.

Typically, the surface layer of the Rawhide soil is black mucky fine sand about 18 inches thick. The upper part of the subsoil is sandy clay loam to a depth of 40 inches. The upper 9 inches is dark gray, and the next 13 inches is grayish brown. The lower part of the subsoil is gray sandy loam to a depth of 65 inches and light gray loamy fine sand to a depth of 80 inches or more.

In 80 percent of areas mapped as Tooles-Rawhide complex, frequently flooded, Tooles and Rawhide soils and similar soils make up 80 to 100 percent of the map unit. Generally, the mapped areas are about 55 percent Tooles and similar soils and 35 percent Rawhide and similar soils. The components of this map unit are so intricately intermingled that it was not practical to map them separately. The proportions and patterns of Tooles and Rawhide soils and similar soils are relatively consistent in most delineations of the map unit.

Soils that have dissimilar characteristics make up about 0 to 20 percent of the map unit. In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent of the unit. The dissimilar soils included with these soils in mapping are small areas of Chaires, Leon, and Surrency soils. Individual areas of inclusions are smaller than 5 acres in size. Chaires and Leon soils have an organic-coated subsoil at a depth of 20 to 30 inches. Leon soils have a sandy texture to a depth of 80 inches or more. Surrency soils have a low base saturation.

A seasonal high water table is at a depth of 0 to 6 inches in the Tooles soil for 2 to 6 months during wet periods in most years. The Rawhide soils have a seasonal high water table above the surface for 6 to 9 months during wet periods in most years. The water table recedes to a depth of more than 12 inches during dry periods. Flooding occurs in areas of the Tooles and Rawhide soils frequently during rainy periods. The duration and extent of flooding are variable, and they are directly related to the intensity and frequency of rainfall. The flooding occurs for less than 7 days in areas of the Tooles soil and from a few weeks to several months in areas of the Rawhide soil. Excess water ponds in the lowest areas of the Rawhide soil. The available water capacity is low in the Tooles soil and moderate in the Rawhide soil. Permeability is slow in the Tooles soil and slow or very slow in the Rawhide soil.

These soils are in the Wetland Hardwood Hammocks ecological plant community. In most broad areas on the flood plain, the natural vegetation includes slash pine, loblolly pine, water oak, laurel oak, southern redcedar, sweetgum, and magnolia. Pondcypress, baldcypress, pond pine, red maple, cabbage palm, and sweetbay are in the lower areas of the flood plain. The understory vegetation consists of hairy panicum, chalky bluestem, pineland threeawn, greenbrier, paspalum, waxmyrtle, cabbage palm, longleaf uniola, and eastern gamagrass on the higher parts of the landform. It consists of maidencane and various water-tolerant grasses in the low areas. Most areas of these soils support the natural vegetation.

These soils have severe limitations for cultivated crops, tame pasture, and planted pine trees because of the flooding and the prolonged wetness unless a major water-control system is used.

This map unit has severe limitations for local roads and streets, septic tank absorption fields, dwellings without basements, and small commercial buildings. Flooding, wetness, ponding, and poor filtration are the main limitations. Shallow and deep drainage can reduce the wetness. If areas of this map unit are used as a septic tank absorption field, mounding of the field may be needed.

This map unit has severe limitations for recreational uses. The flooding, ponding, and the loose, sandy surface layer are the main limitations for trafficability. Suitable topsoil fill material or some other type of surface stabilization is necessary to overcome the sandy texture. Soil blowing is a hazard. Establishing and maintaining a good vegetative cover or planting windbreaks can control soil blowing.

The Tooles soil is in capability subclass Vw, and the woodland ordination symbol is 10W. The Rawhide soil is in capability subclass VIIw, and the woodland ordination symbol is 2W.

48—Otela, limestone substratum-Shadeville-Penney complex, 0 to 5 percent slopes

These nearly level to gently sloping soils are on uplands. The Otela and Shadeville soils are moderately

well drained, and the Penney soil is excessively drained. The mapped areas are irregular in shape and range from about 50 to more than 150 acres in size. The slope is nearly smooth to convex.

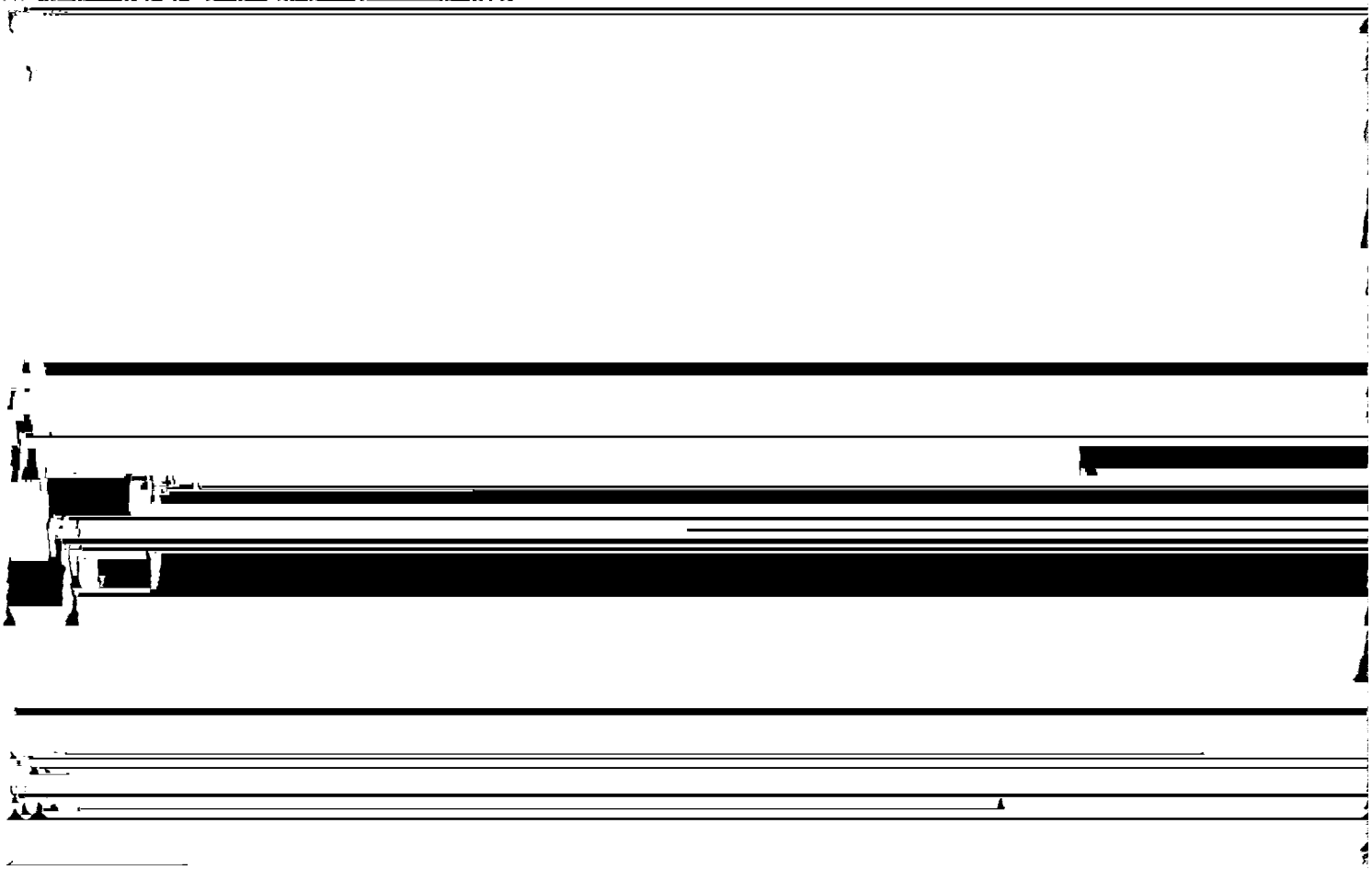
Typically, the surface layer of the Otela soil is very dark grayish brown fine sand about 8 inches thick. The subsurface layer is fine sand, and it extends to a depth of 58 inches. The upper 10 inches is light yellowish brown, the next 20 inches is yellowish brown, the next 14 inches is very pale brown, and the lower 6 inches is yellowish brown and light gray. The subsoil is light gray sandy clay loam, and it extends to a depth of 72 inches. Below this depth is limestone bedrock.

Typically, the surface layer of the Shadeville soil is dark brown fine sand to a depth of about 8 inches. The

Tooles soils are poorly drained and are on the lower parts of the landscape.

A seasonal high water table is at a depth of 48 to 72 inches in the Otela, limestone substratum, and Shadeville soils during wet periods in most years. The Penney soil has a water table at a depth of more than 72 inches during wet periods. The available water capacity is low in the Otela, limestone substratum, soil and in the Shadeville soil. It is very low in the Penney soil. Permeability is moderately slow in the Otela soil, moderate in the Shadeville soil, and rapid throughout the Penney soil.

These soils are in the Longleaf Pine-Turkey Oak Hills ecological plant community. In most areas, the natural vegetation includes slash pine, loblolly pine, longleaf pine, live oak, laurel oak, post oak, turkey oak, bluejack oak,



about 28 inches. The upper 10 inches is pale brown, and the lower 10 inches is light yellowish brown. The subsoil is sandy clay loam, and it extends to a depth of about 55 inches. The upper 10 inches is reddish yellow, the next 8 inches is strong brown, and the lower 9 inches is yellowish brown. Below this depth is limestone bedrock.

Typically, the surface layer of the Penney soil is very dark grayish brown fine sand about 7 inches thick. The

consists of lopsided indiangrass, hairy panicum, greenbriar, hawthorn, persimmon, fringeleaf paspalum, hairy tick clover, dwarf huckleberry, chalky bluestem, creepy bluestem, and pineland threeawn. Most areas of this map unit are used for the production of planted pine, crops, or pasture.

These soils have severe limitations for cultivated crops because of droughtiness during dry periods. Plant

practices, such as chopping or controlled burning. A harvesting system that leaves most of the biomass on the surface is recommended.

This map unit has slight limitations for dwellings without basements and local roads and streets. It has moderate limitations for septic tank absorption fields. The depth to bedrock, wetness, and slow percolation are the main limitations. In areas that have a concentration of homes and septic tank absorption fields, ground-water contamination can be a hazard because of wetness, depth of rock, and poor filtration.

This map unit has severe limitations for recreational uses. The loose, sandy surface layer is a severe limitation for trafficability. Suitable topsoil fill material or some other type of surface stabilization is necessary to overcome this limitation. Soil blowing is a hazard. Establishing and maintaining a good vegetative cover or planting windbreaks can control soil blowing.

The Otela soil is in capability subclass IIIs, and the woodland ordination symbol is 10S. The Shadeville soil is in capability IIIs, and the woodland ordination symbol is 11S. The Penney soil is in capability subclass IVs, and the woodland ordination symbol is 8S.

52—Mandarin fine sand

This soil is nearly level and somewhat poorly drained. It is on low ridges on the flatwoods. The mapped areas are irregular in shape and range from about 10 to more than 50 acres in size. The slope is nearly smooth to convex. The slope ranges from 0 to 2 percent.

Typically, the surface layer of the Mandarin soil is dark gray fine sand about 6 inches thick. The subsurface layer is fine sand to a depth to a depth of 25 inches. The upper 4 inches is light brownish gray, and the lower 15 inches is light gray. The subsoil is fine sand to a depth of 52 inches. The upper 4 inches is very dark grayish brown, the next 8 inches is very dark brown, and the lower 15 inches is brown. The underlying material is fine sand, and it extends to a depth of 80 inches or more. The upper 18 inches is light gray, and the lower 10 inches is light brownish gray.

In 80 percent of areas mapped as Mandarin fine sand, the Mandarin soil and similar soils make up 80 to 100 percent of the map unit. The similar soils include Hurricane and Leon soils.

Soils that have dissimilar characteristics make up about 0 to 20 percent of the map unit. In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent of the unit. The dissimilar soils included in mapping are small areas of Albany and Ridgewood soils. Individual areas of inclusions are smaller than 5 acres in size. Albany soils have a loamy subsoil. Ridgewood soils do not have an organic-coated subsoil. Albany and Ridgewood soils are in higher positions on the landscape than the Mandarin soil.

A seasonal high water table is at a depth of 18 to 42 inches in the Mandarin soil for 1 to 3 months during wet periods in most years. It recedes to a depth of more than 40 inches during the dry periods. The available water capacity is low. Permeability is moderate.

This soil is in the North Florida Flatwoods ecological plant community. In most areas, the natural vegetation includes slash pine, longleaf pine, live oak, and laurel oak. The understory consists of lopsided indiangrass, hairy panicum, creepy bluestem, pineland threeawn, broomsedge bluestem, grassleaf goldaster, and saw palmetto. Most areas of this soil are used for the production of pasture or planted pine.

This soil has severe limitations for cultivated crops. The high water table during wet seasons can limit the growth of roots. Plant nutrients are rapidly leached because of the sandy texture. Corn, peanuts, soybeans, tobacco, and watermelons are crops that can be grown with intensive management and the use of good conservation practices. Using a crop rotation system that includes cover crops, returning crop residue to the soil, and properly applying fertilizer and lime are practices that are necessary for good yields. Irrigation is desirable during droughty periods. Soil blowing is a severe hazard if the topsoil is left unprotected.

This soil is moderately suited to tame pasture. Improved bahiagrass, bermudagrass, and clover are suited. Yields are generally reduced by periodic wetness. Careful management is required to maintain good grazing. This includes the establishment of a proper plant population, applications of fertilizer and lime, and controlled grazing. Irrigation improves the quality of grazing and of hay crops. A water-control system is needed to remove the excess surface water during heavy rains and to provide irrigation during droughty periods.

The potential productivity of this soil for pine trees is moderate. Slash pine and longleaf pine are suitable for planting. The thick, sandy texture restricts the use of wheeled equipment. This limitation can be overcome by harvesting when the soil is moist. Plant competition can be controlled by site preparation practices, such as chopping or controlled burning. A harvesting system that leaves most of the biomass on the surface is recommended.

This soil has moderate limitations for dwellings without basements and local roads and streets. It has severe limitations for septic tanks absorption fields. Wetness, poor filtration, and the sandy texture are the main limitations. Deep drainage reduces the wetness. If areas of this soil are used as a septic tank absorption field, mounding of the field may be needed. In areas that have a concentration of homes, a community sewage system is

needed to prevent the contamination of ground water from poor filtration and the high water table during wet periods.

This map unit has severe limitations for recreational uses. The loose, sandy surface layer limits trafficability. Suitable topsoil fill material or some other type of surface stabilization is necessary to overcome this limitation. Soil blowing is a hazard. Establishing and maintaining a good vegetative cover or planting windbreaks can control soil

nutrients leach rapidly. Corn, peanuts, soybeans, tobacco, and watermelons are crops that can be grown with intensive management and the use of good conservation practices. Using a crop rotation system that includes cover crops, returning crop residue to the soil, and properly applying fertilizer and lime are practices that are necessary for good yields. Irrigation is desirable during droughty periods. Soil blowing is a severe hazard if the

shape and range from about 20 to more than 150 acres in size. The slope is nearly smooth to convex.

Typically, the surface layer of the Garcon soil is dark gray fine sand about 6 inches thick. The subsurface layer is fine sand, and it extends to a depth of 23 inches. The upper 10 inches is brown, and the lower 7 inches is very pale brown. The subsoil is sandy clay loam and sandy loam to a depth of 58 inches. The upper 15 inches is brownish yellow sandy clay loam, and the lower 20 inches is light brownish gray sandy loam. Below this depth is white fine sand to a depth of 80 inches or more.

Typically, the surface layer of the Eunola soil is very dark grayish brown fine sand about 6 inches thick. The subsurface layer is pale brown fine sand to a depth of 15 inches. The subsoil is sandy clay loam and sandy loam to a depth of 55 inches. The upper part is yellowish red, the next part is strong brown, and the lower part is yellowish red sandy loam. The underlying material is very pale brown fine sand to a depth of 80 inches or more.

In 80 percent of areas mapped as Garcon-Eunola complex, 2 to 5 percent slopes, occasionally flooded, Garcon and Eunola soils and similar soils make up 80 to 100 percent of the map unit. Generally, the mapped areas are about 65 percent Garcon and similar soils and 30 percent Eunola and similar soils. The components of this map unit are so intricately intermingled that it was not practical to map them separately. The proportions and patterns of Garcon and Eunola soils and similar soils are relatively consistent in most delineations of the map unit.

Soils that have dissimilar characteristics make up about 0 to 20 percent of the map unit. In 0 to 20 percent of the mapped areas, the dissimilar soils make up more than 20 percent of the unit. The dissimilar soils included in mapping are small areas of Blanton, Mandarin, and Ortega soils. Individual areas of inclusions are smaller than 5 acres in size. Mandarin soils have an organic-coated subsoil at a depth of 20 to 30 inches. Blanton and Ortega soils are moderately well drained and are on the higher parts of the landscape. Blanton soils have a sandy epipedon at a depth of 40 to 80 inches, and Ortega soils are sandy to a depth of 80 inches or more.

A seasonal high water table is at a depth of 18 to 36 inches in the Garcon soil and at a depth of 18 to 30 inches in the Eunola soil for 1 to 3 months during wet periods in most years. It recedes to a depth of more than 30 inches during dry periods. Flooding occurs in areas of the Garcon and Eunola soils several times during a 10-year span. The duration and extent of flooding are variable, and they are directly related to the intensity and frequency of rainfall. The flooding occurs for less than 7 days in areas of the Garcon and Eunola soils. The available water capacity is low in both of these soils. Permeability is moderate.

These soils are in the mixed Hardwood-Pine ecological plant community. In most broad upland areas on the flood plain, the natural vegetation includes slash pine, loblolly pine, longleaf pine, water oak, sweetgum, live oak, laurel oak, and hickory. The understory consists of pineland threeawn, grassleaf goldaster, gallberry, waxmyrtle, blueberry, saw palmetto, American holly, huckleberry, panicum, longleaf uniola, and little bluestem. Most areas of these soils are used for the production of planted pine or pasture.

These soils have severe limitations for cultivated crops because of the flooding and wetness. The high water table during wet seasons can limit the growth of roots. Plant nutrients leach rapidly. Corn, soybeans, and oats are crops that can be grown with intensive management and the use of good conservation practices. Using a crop rotation system that includes cover crops, returning crop residue to the soil, and properly applying fertilizer and lime are practices that are necessary for good yields. Irrigation is desirable during droughty periods. Soil blowing is a severe hazard if the topsoil is left unprotected.

This map unit is moderately suited to tame pasture. Deep-rooting grasses, such as improved bahiagrass and bermudagrass, are suited. Yields are generally reduced by periodic droughts. Careful management is required to maintain good grazing. This includes the establishment of a proper plant population, applications of fertilizer and lime, and controlled grazing. Irrigation improves the quality of grazing and of hay crops. If available during long dry periods, the use of irrigation water may be economically justifiable. These soils are not suited to shallow-rooting pasture plants because the soils cannot retain sufficient moisture in the rooting zone for good growth.

The potential productivity for pine trees is moderately high for the Garcon soil and high for the Eunola soil. Slash pine and loblolly pine are suitable for planting. The thick, sandy texture restricts the use of wheeled equipment. This limitation can be overcome by harvesting when the soils are moist. Seedling mortality, which is caused by droughtiness, can be partially reduced by increasing the tree planting rate and the planting depth. Plant competition can be controlled by site preparation practices, such as chopping or controlled burning. A harvesting system that leaves most of the biomass on the surface is recommended.

This map unit has severe limitations for local roads and streets, septic tank absorption fields, dwellings without basements, and small commercial buildings. Flooding, poor filtration, and wetness are the main limitations. Deep drainage reduces the wetness. If areas of this map unit are used as a septic tank absorption field, mounding of the field may be needed. If the density of housing is moderate to high, community sewage systems are needed to

prevent the contamination of ground water from seepage.

This map unit has severe limitations for recreational uses. The flooding and the loose, sandy surface layer limit trafficability. Suitable topsoil fill material or some other type of surface stabilization is necessary to overcome the sandy surface texture. Soil blowing is a hazard. Establishing and maintaining a good vegetative cover or planting windbreaks can control soil blowing.

The Garcon soil is in capability subclass IIw, and the woodland ordination symbol is 10W. The Eunola soil is in capability subclass IIw, and the woodland ordination symbol is 11W.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses

Conservation Service is explained; and the estimated yields of the main crops and hay and pasture plants are

the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis for predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the suitability, potentials, and limitations

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading "Detailed Soil Map Units." Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

In 1990, approximately 95,847 acres in Lafayette County were used for crops and pasture. The acreage includes areas used for tame pasture; field crops, mainly corn, peanuts, tobacco, sorghum, wheat, oats, peanuts, soybeans, peas, and hay; and specialty crops, such as sweet corn, watermelons, field peas, and a small acreage of grapes and pecans.

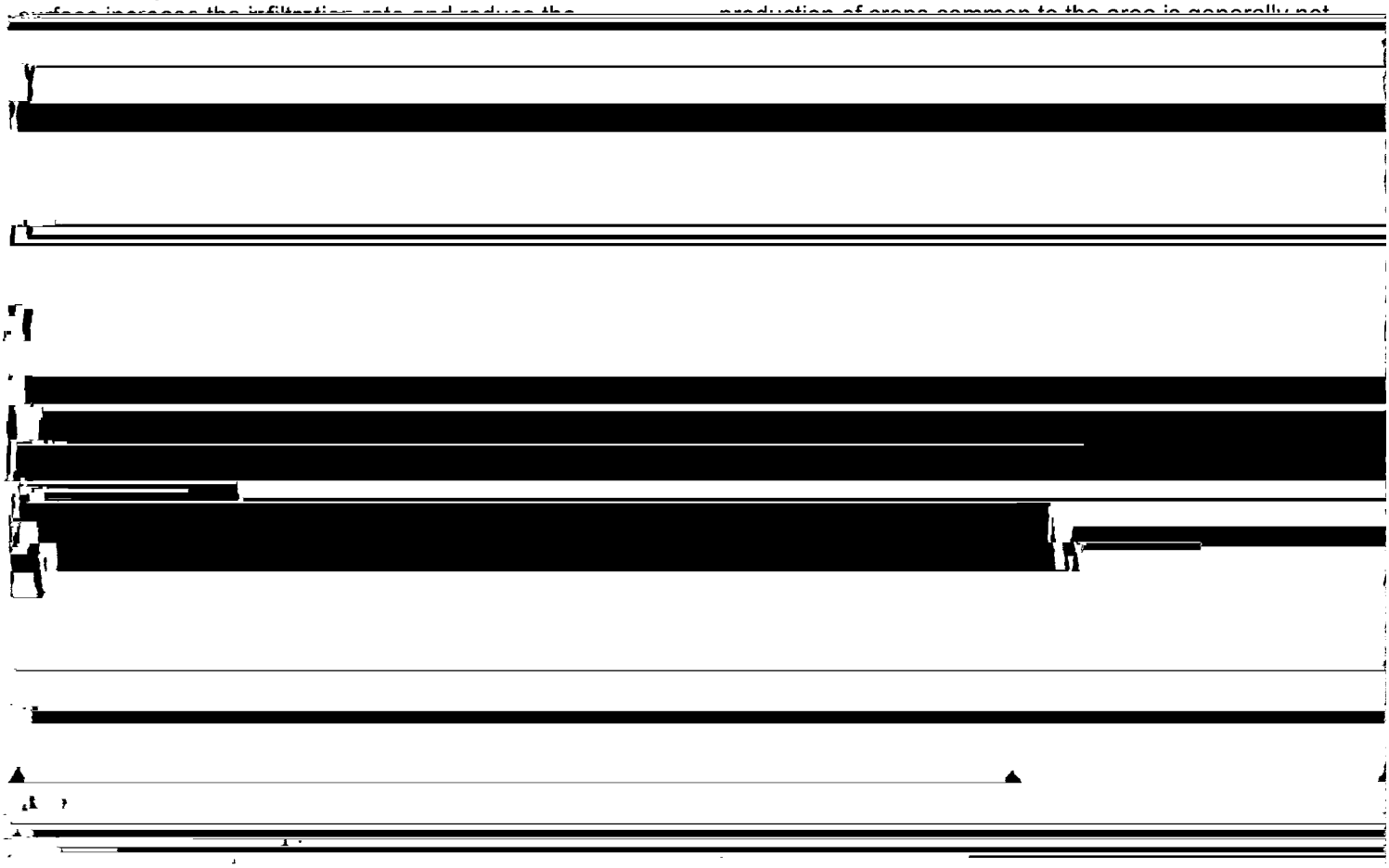
The potential of the soils in Lafayette County for the increased production of food is fair. About 300 acres of potentially good cropland is now used as woodland, and

losses to amounts that will not reduce the productive capacity of the soils. On livestock farms, which require pasture and hay, including legume and grass forage crops in the cropping system reduces erosion on sloping land and provides nitrogen and improves tilth for the following crops.

Minimizing tillage and leaving crop residue on the

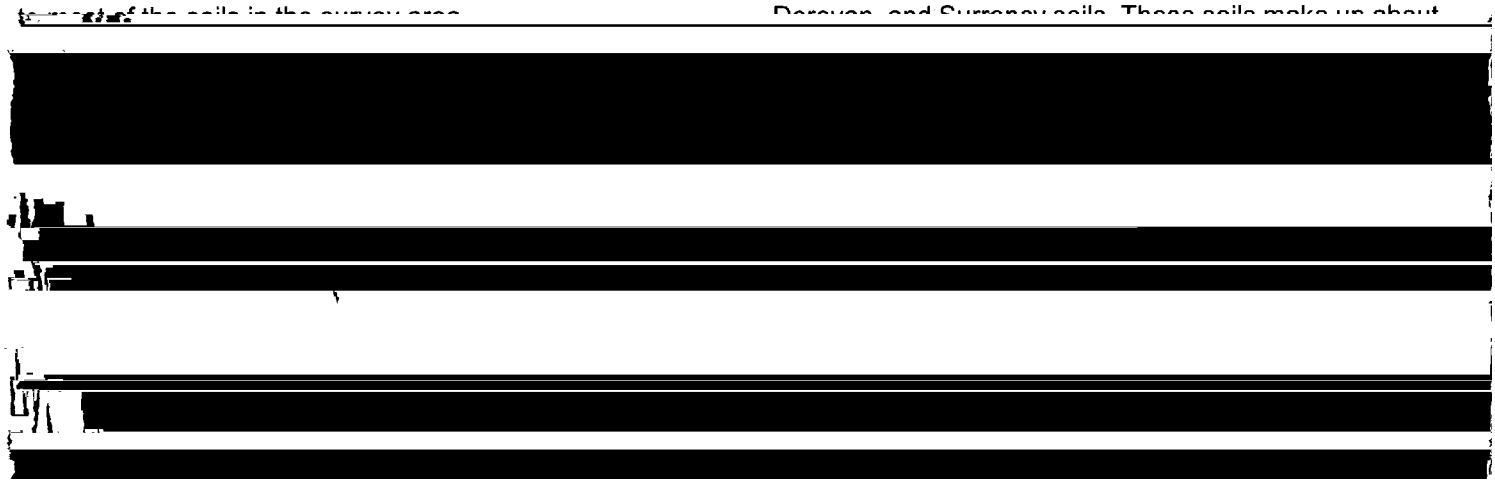
control practices for each kind of soil is contained in the "Erosion Control Handbook—Florida," which is available at local offices of the Natural Resources Conservation Service.

Soil drainage is a major management concern on about 10 percent of the acreage used for crops and pasture in the county. Some soils are naturally so wet that the



hazards of runoff and erosion. Conservation tillage practices for corn and soybeans are effective in reducing erosion in sloping areas. These practices can be adapted

practical. These soils include the poorly drained Leon and Sapelo soils, the poorly drained and very poorly drained Chaires soils, and the very poorly drained Pamlico,



have good tilth are easily cultivated with common tillage equipment. They provide a good seedbed.

Most of the soils in the survey area have a sandy surface layer or a surface layer of loamy fine sand. The layer is light in color and has a low to moderate content of organic matter. Some exceptions include Dorovan, [redacted] soils, which are organic soils or soils that have an organic surface layer. Generally, the structure of the surface layer of most soils in the survey area is weak. When soils that are dry and have a low content of organic matter receive intense rainfall, colloidal matter cements and forms a slight crust, particularly if a plowpan is present. The crust is slightly hard when it is dry, and it is slightly impervious to water. Once the crust forms, it reduces infiltration and increases runoff. Regular additions of crop residue, manure, and other organic material improve the soil structure and reduce the

purposes. Many cattlemen seed small grains in areas of cropland and overseed rye in pastures in the fall for winter and spring grazing. In bermudagrass pastures, the excess grass is harvested as hay during the summer for feeding during the winter. Also, hay is made from harvested peanuts during the fall for feeding during the winter.

[redacted]

Otela, Shadeville, Blanton, and Eunola soils are well suited to bahiagrass and improved bermudagrass. With good management, hairy indigo and Alyce clover can be grown during the summer and the fall.

The somewhat poorly drained Albany and Hurricane soils are well suited to bahiagrass and to improved bermudagrass if they are grown with legumes, such as sweetclover, and if adequate amounts of lime and fertilizer are applied.

If drainage is provided in areas where it is needed,

appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the table are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for use as cropland. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode, but they have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main hazard is the risk of erosion unless a close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

There are no subclasses in class I because the soils of this class have few limitations. The soils in class V are subject to little or no erosion, but they have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation. Class V contains only the subclasses indicated by *w* or *s*.

The capability classification of each map unit is given in the section "Detailed Soil Map Units."

Woodland Management and Productivity

Forestry has played an important role in the economic development of Lafayette County. The forest industry presently ranks fifth in providing jobs in the county.

About 286,790 acres in Lafayette County, or about 82 percent of the land area, is used as woodland. These areas of commercial woodland are mainly owned by large timber and wood products industries. The rest of the woodland acreage consists of small, privately owned tracts.

The main commercial trees are slash pine, longleaf pine, and loblolly pine. The most common hardwoods include laurel oak, water oak, sweetgum, black cherry, and various types of hickory trees.

The soils and climate of Lafayette County are well suited to the commercial production of timber. Currently, most areas of woodland in the county are on Chaires, Leon, Sapelo, and Meadowbrook soils. These soils are typical of poorly drained soils in the flatwoods throughout the county. In better drained areas, the soils that are commonly used as woodland include Blanton, Albany, Ridgewood, Hurricane, and Ortega soils. These soils are in the southern and southwestern parts of the county, in and around Cook Hammock and Buckville.

For many years, individuals and woodland industries have planted and grown pines for profit. Recently,

many farmers have been planting pines in idle fields because of declining profits in agriculture. Slash pine is the most common tree planted because it has a fast growth rate on a wide variety of soils. It can be easily transplanted. Longleaf pine is recommended on the dry, sandy soils that are mostly in the northern and northeastern parts of the county. Loblolly pine grow exceptionally well.

On a properly managed pine plantation, the production of 1 1/2 cords per acre per year is not unusual. Some recommended woodland management practices include plowing fire lines annually to protect the stand from wildfires, periodic selective thinning to reduce excessive competition, and regular prescribed burnings to control the growth of undesirable hardwoods and to improve the habitat for wildlife.

Soils vary in their ability to support trees. The depth of the soil, fertility, texture, and the available water capacity influence tree growth. The available water capacity and depth of the root zone are the major influences on tree growth.

This soil survey can be used by woodland managers planning ways to increase the productivity of forest land. Some soils respond better to applications of fertilizer than others, and some are more susceptible to landslides and erosion after roads are built and timber is harvested. Some soils require special reforestation efforts. In the section "Detailed Soil Map Units," the description of each map unit in the survey area suitable for timber includes information about productivity, limitations in harvesting timber, and management concerns in producing timber. The common forest understory plants also are listed. Table 6 summarizes this forestry information and rates the soils for a number of factors to be considered in management. *Slight, moderate,* and *severe* are used to indicate the degree of the major soil limitations to be considered in forest management.

The table lists the *ordination symbol* for each soil. The first part of the ordination symbol, a number, indicates the potential productivity of a soil for the indicator species in

management. If a soil has more than one limitation, the priority is as follows: R, X, W, and S.

Ratings of the *erosion hazard* indicate the probability that damage may occur if site preparation or harvesting activities expose the soil. The risk is *slight* if no particular preventive measures are needed under ordinary conditions; *moderate* if erosion-control measures are needed for particular silvicultural activities; and *severe* if special precautions are needed to control erosion for most silvicultural activities. Ratings of moderate or severe indicate the need for construction of higher standard roads, additional maintenance of roads, additional care in planning harvesting and reforestation activities, and the use of special equipment.

Ratings of *equipment limitation* indicate limits on the use of forest managment equipment, year-round or seasonal, because of such soil characteristics as slope, wetness, and susceptibility of the surface layer to compaction. As slope gradient and length increase, it becomes more difficult to use wheeled equipment. On the steeper slopes, tracked equipment is needed. On the steepest slopes, even tracked equipment cannot be operated and more sophisticated systems are needed. The rating is *slight* if equipment use is restricted by wetness for less than 2 months and if special equipment is not needed. The rating is *moderate* if slopes are so steep that wheeled equipment cannot be operated safely across the slope, if wetness restricts equipment use from 2 to 6 months per year, if stoniness restricts the use of ground-based equipment, or if special equipment is needed to prevent or minimize compaction. The rating is *severe* if slopes are so steep that tracked equipment cannot be operated safely across the slope, if wetness restricts equipment for more than 6 months per year, if stoniness restricts the use of ground-based equipment, or if special equipment is needed to prevent or minimize compaction. Ratings of moderate or severe indicate a need to choose the best suited equipment and to carefully plan the timing of harvesting and other management activities.

Ratings of *seedling mortality* refer to the probability of

percent. Ratings of moderate or severe indicate that it may be necessary to use containerized or larger than usual planting stock or to make special site preparations, such bedding, furrowing, installing a surface drainage system, and providing artificial shade for seedlings. Reinforcement planting is often needed if the risk is moderate or severe.

Ratings of *windthrow hazard* indicate the likelihood that trees will be uprooted by the wind. A restricted rooting depth is the main reason for windthrow. The rooting depth can be restricted by a high water table or by such factors as wetness, texture, structure, and depth. The risk is *slight* if strong winds cause trees to break but do not uproot them; *moderate* if strong winds cause an occasional tree to be blown over and many trees to break; and *severe* if moderate or strong winds commonly blow trees over. Ratings of moderate or severe indicate that care is needed in thinning or that the stand should not be thinned at all. Special equipment may be needed to prevent damage to shallow root systems in partial cutting operations. A plan for the periodic removal of windthrown trees and the maintenance of a road and trail systems may be needed.

Ratings of *plant competition* indicate the likelihood of the growth or invasion of undesirable plants. Plant competition is more severe on the more productive soils, on poorly drained soils, and on soils having a restricted root zone that holds moisture. The risk is *slight* if competition from undesirable plants hinders adequate natural or artificial reforestation but does not necessitate intensive site preparation and maintenance. The risk is *moderate* if competition from undesirable plants hinders natural or artificial reforestation to the extent that intensive site preparation and maintenance are needed. The risk is *severe* if competition from undesirable plants prevents adequate natural or artificial reforestation unless the site is intensively prepared and maintained. A moderate or severe rating indicates the need for site preparation to

The *productivity class* represents an expected volume produced by the most important trees, expressed in cubic meters per hectare per year. Cubic meters per hectare can be converted to cubic feet per acre by multiplying by 14.3. Cubic feet can be converted to board feet by multiplying by a factor of about 5. For example, a productivity class of 8 means that the soil can be expected to produce 114 cubic feet per acre per year at the point where mean annual increment culminates, or about 570 board feet per acre per year.

Trees to plant are those that are used for reforestation or, under suitable conditions, natural regeneration. They are suited to the soils and can produce a commercial wood crop. The desired product, topographic position (such as a low, wet area), and personal preference are three factors among many that can influence the choice of trees for use in reforestation.

Grazing Land

Sid B. Brantly, State range conservationist, Natural Resources Conservation Service, helped to prepare this section.

Grazing land in Lafayette County provides food and cover for livestock and wildlife. White-tailed deer, wild turkey, quail, dove, squirrel, and numerous nongame wildlife species live on pasture, rangeland, and grazeable woodland areas. About 22,000 head of cattle and calves are also maintained on Lafayette County grazing lands.

Pasture

Pasture vegetation consists mainly of introduced forage species that do not require annual tillage. Pasture areas in Lafayette County are mainly used to produce forage for beef and dairy cattle. Bahiagrass and bermudagrass are the major pasture plants grown in Lafayette County. Some producers overseed rye or other small grains on pasture in the fall for winter and spring grazing. Eastern gamagrass may be

followed by a three-week recovery period. The stubble height on improved varieties of bermudagrass should be at a height of about four inches, with a five-week recovery period between grazing periods.

Rangeland

The dominant vegetation in rangeland areas is native grasses, grasslike plants, forbs, and shrubs that are suitable for grazing. Sound management plans for this land include the practices described in the following paragraphs.

Proper grazing use requires manipulating the length and intensity of grazing so that no more than 50 percent of the current year's growth of desirable plants is removed each year. It is best accomplished by implementing a *planned grazing system*, which allows for deferment periods during the growing season.

Weed and brush management can be used to alter the type and distribution of brush and weeds to approximate natural conditions. Mechanical treatment, chemical treatment, and prescribed burning can be used individually or in conjunction to accomplish the range manager's goals.

Deferred grazing improves the condition and vigor of forage plants through a period of complete rest from any type of use by livestock. Generally, a deferment of at least 30 days follows prescribed burning. A similar 90-day deferment follows mechanical treatment.

A *range site* is a distinctive kind of rangeland that [redacted]

when the site is in excellent condition. In poor or fair range condition, this site is identified by its association with saw palmetto, gallberry, and wiregrass. It generally has a fairly dense stand of slash pine, longleaf pine, and loblolly pine. The average production from sites in excellent condition is about 4,500 pounds of forage per acre.

Slough. This range site, which is often wooded, is characterized by nearly level areas that act as road natural drainage courses. The potential plant community is dominated by blue maidencane, chalky bluestem, and panicums. These grasses are all readily utilized by livestock. If overgrazing occurs for prolonged periods, wiregrass, bottlebrush threeawn, muhlys, and other less desirable species replace the better plants. The average production from sites in excellent condition is about 5,500 pounds of forage per acre. This total is reduced in areas that have a heavy timber canopy.

Wetland Hardwood Hammock. This range site is forested, nearly level, and somewhat poorly drained to poorly drained. Oaks, red maple, sweetgum, and cypress dominate the forest canopy. Due to the density of the overstory, the potential production of forage is low. Longleaf uniola, eastern gamagrass, switchgrass, chalky bluestem, and maidencane are important forages when this site is in excellent condition. In poor condition, wiregrass and dogfennel are common as ground vegetation. The average annual production from sites in excellent production is 2,500 pounds of forage per acre.

Longleaf Pine-Turkey Oak Hills. This range site is in [redacted]

grasses and grasslike plants, 15 percent forbs, and 5 percent woody plants and trees.

Grazable Woodland

Grazable woodland is forest land that produces, at least periodically, sufficient understory vegetation suitable for forage that grazing will not significantly impair the production of wood. Sound management practices in areas of grazable woodland include adjusting the intensity and duration of livestock grazing so that half of the current year's growth on grazing plants is left at the end of each grazing season.

Another recommended practice is locating supplemental feeding troughs, mineral feeders, and water developments away from newly planted areas. New plantings or stands that are naturally regenerating are

many lakes and ponds are enjoyed by year-round residents and by visitors. The Suwannee River provides opportunities for boating and canoeing, and Blue Springs and Troy Springs provide opportunities for swimming and scuba or skin diving. A golf course, baseball fields, tennis courts, handball courts, and basketball courts are also available in Lafayette County.

In table 7, the soils of the survey area are rated according to the limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and

boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

John F. Vance, biologist, Natural Resources Conservation Service, helped to prepare this section.

Wildlife is a valuable resource of Lafayette County. Fishing and hunting are popular, year-round activities. Large areas of wetlands and uplands provide habitat for a wide variety of wildlife.

The main wildlife species include white-tailed deer, squirrels, turkey, bobwhite quail, feral hogs, and water fowl. Nongame species include raccoon, otter, and a variety of songbirds, wading birds, woodpeckers, predatory birds, reptiles, and amphibians. Some of the more important habitat areas are the large wetland areas of the Cook Hammock and Steinhatchee Wildlife Management Area in the southern part of the county and along the Suwannee River on the eastern boundary.

Lafayette County contains numerous small lakes. Five lakes are more than 100 acres in size. The largest lake is Alton Lake, which is 155 acres in size. Good opportunities for fishing are found throughout the county. Game and

and threatened species, with information about range and habitat needs, is available from the local office of the Natural Resources Conservation Service.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 8, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are

considerations. Examples of grasses and legumes are bahiagrass, lovegrass, Florida beggarweed, clover, and sesbania.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, partridge pea, and bristlegrasses.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, palmetto, cherry, sweetgum, wild grape, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are firethorn, wild plum, and American beautyberry.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, cypress, cedar, and juniper.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are [illegible] associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, egrets, shore birds, otter, mink, and beaver.

Engineering

Elwyn O. Cooper, area engineer, Natural Resources Conservation Service, helped to prepare this section.

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. [illegible]

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 9 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations, if any, are minor and easily overcome; *moderate* if soil properties or site features are somewhat restrictive for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable that special design, soil reclamation, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm, dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and small commercial buildings are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. Depth to a high water table, depth to bedrock or to a cemented pan, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, depth to a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, depth to a high water table, depth to bedrock or to a cemented pan, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 10 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations, if any, are minor and easily overcome; *moderate* if soil properties or site features are moderately favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or alteration.

The table also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that

features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, depth to a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

The table gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

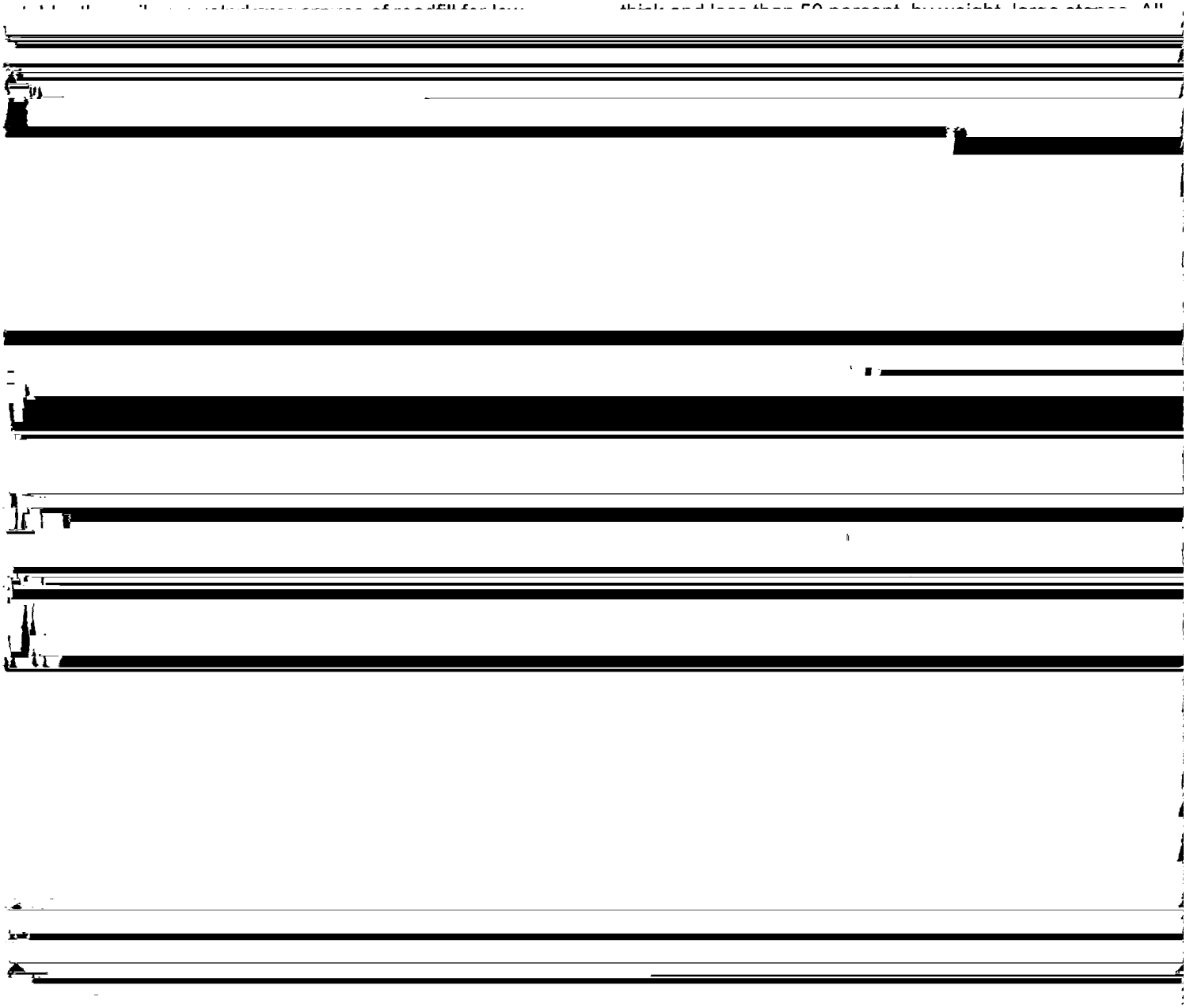
Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in the table are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock, depth to a water table, slope, and flooding affect both types of landfill. Texture, highly organic layers, soil reaction, and content of salts and sodium affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter,



embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

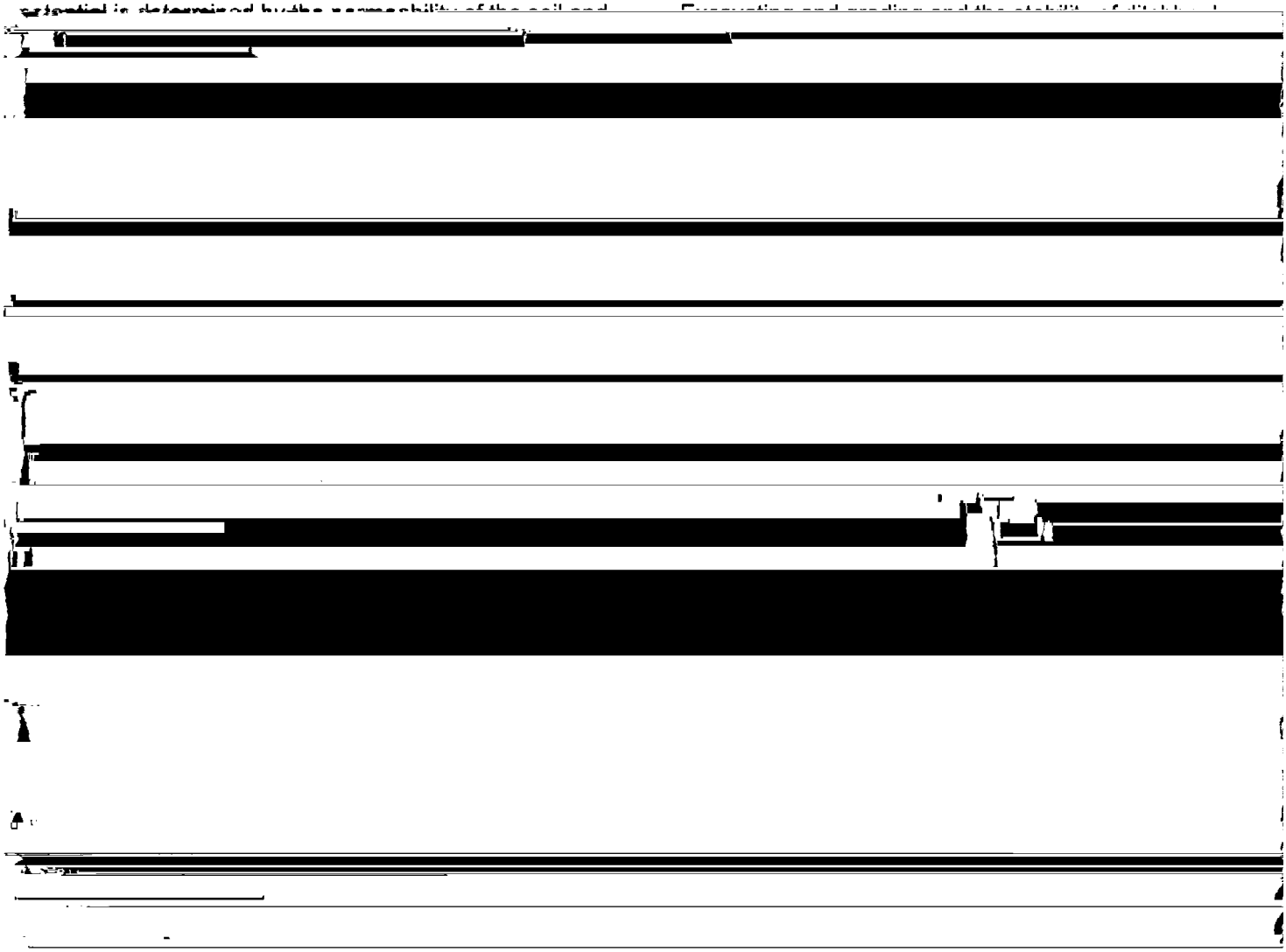
Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth

each soil for drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks



are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics. These results are reported in table 19.

[redacted]

added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system *(2)* and the system adopted by the American Association of State Highway and Transportation Officials *(1)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. [redacted]

estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 14 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence the shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for

varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, more than 9 percent, is sometimes used.

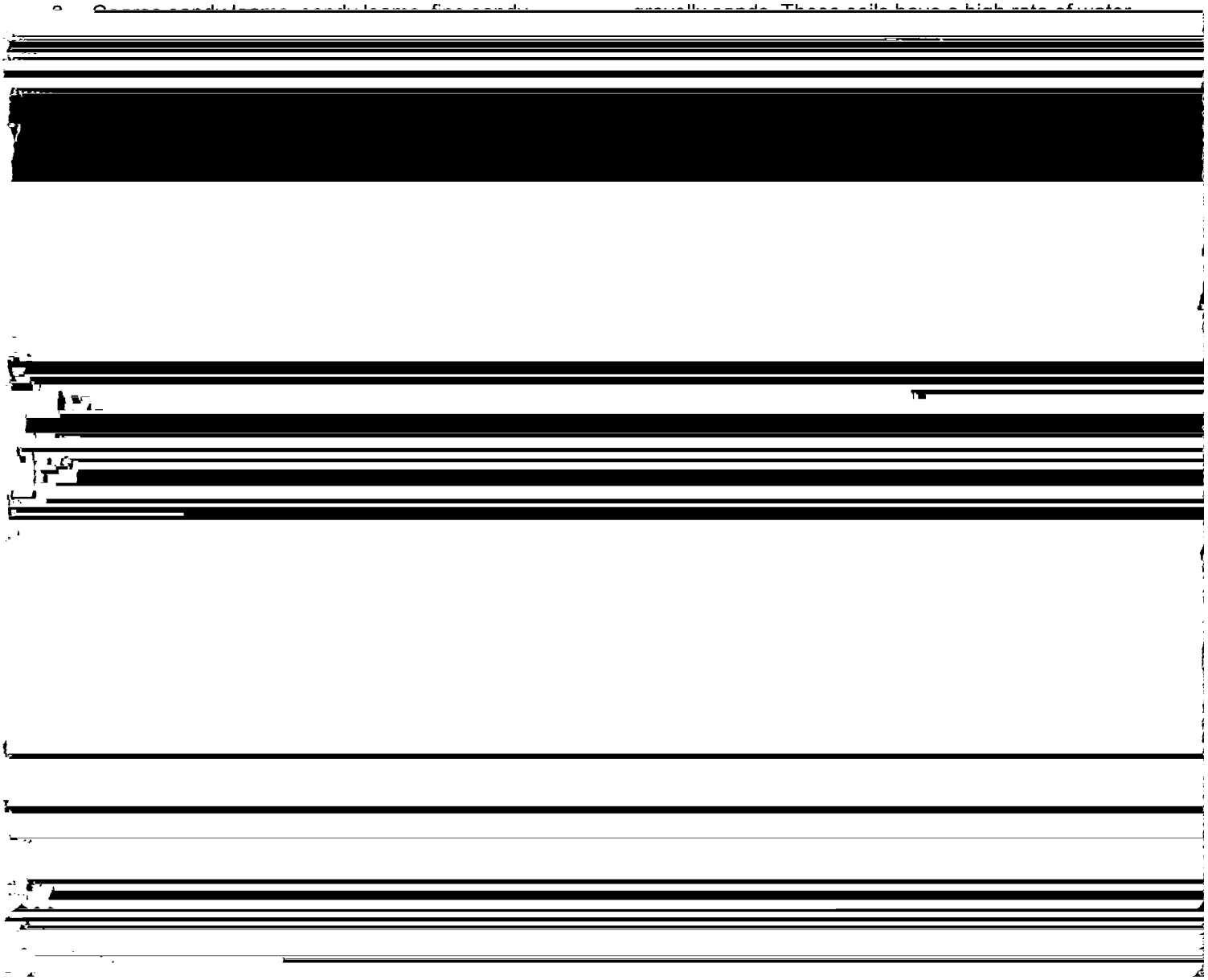
Erosion factor K indicates the susceptibility of a soil to

in cultivated areas. The groups indicate the susceptibility of soil to wind erosion. Soils are grouped according to the following distinctions:

1. Coarse sands, sands, fine sands, and very fine sands. These soils are extremely erodible, and vegetation is difficult to establish.

2. Loamy coarse sands, loamy sands, loamy fine sands, and loamy very fine sands. These soils are very highly erodible. Crops can be grown if intensive measures to control wind erosion are used.

3. Coarse sandy loams, sandy loams, fine sandy



loams, and very fine sandy loams. These soils are highly erodible. Crops can be grown if intensive measures to control wind erosion are used.

4L. Calcareous loams, silt loams, clay loam, and silty clay loams. These soils are erodible. Crops can be grown if intensive measures to control wind erosion are used.

4. Clays, silty clays, noncalcareous clay loams, and

Hydrologic soil groups are used to estimate runoff from precipitation. Soils not protected by vegetation are assigned to one of four groups. They are grouped according to the infiltration of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when

classes are grouped for certain purposes. Duration is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 days to 1 month), and *very long* (more than 1 month).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered is local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in the table are the depth to the seasonal high water table; the kind of water table, that is, *perched* or *apparent*; and the months of the year that the water table commonly is highest. A water table that is seasonally high for less than 1 month is not indicated in the table.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Only saturated zones within a depth of about 6 feet are indicated. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

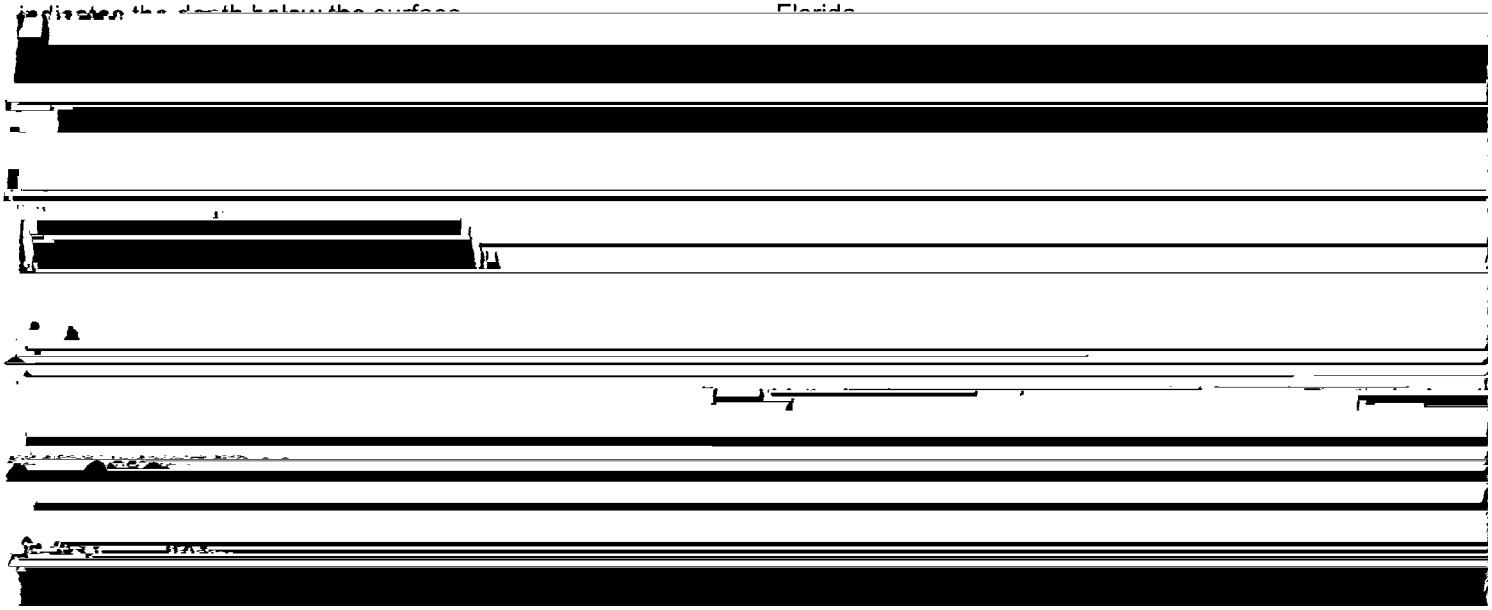
For uncoated steel, the risk of corrosion, expressed as *low, moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low, moderate*, or *high*. It is based on soil texture, acidity, and the amount of sulfates in the saturation extract.

Physical, Chemical, and Mineralogical Analyses of Selected Soils

Analyses were performed by the University of Florida's Soil and Water Science Department, supervised by Dr. Mary E. Collins, professor.

The parameters for the physical, chemical, and mineralogical properties of representative pedons sampled in Lafayette County are presented in tables 16, 17, and 18. Detailed descriptions of the analyzed soils are given in the section "Soil Series and Their Morphology." Laboratory data and profile information for additional soils sampled in Lafayette County, as well as for other counties in Florida, are on file at the Soil Science Department, University of Florida.



was determined by a modified Walkley-Black wet combustion method.

Extractable bases were determined by leaching the samples with normal ammonium acetate buffered at pH 7.0. Sodium and potassium in the extract were determined by flame emission. Calcium and magnesium were determined by atomic absorption spectrophotometry. Extractable acidity was determined by the barium chloride-triethanolamine method at pH 8.2. Cation-exchange capacity was calculated by summation of extractable bases and extractable acidity. Base saturation is expressed as a percentage, using the ratio of extractable bases to cation-exchange capacity. The pH measurements were made with a glass electrode using a soil-water ratio of 1:1; a 0.01 molar calcium chloride solution in a 1:2 soil-solution ratio; and normal potassium chloride solution in a 1:1 soil-solution ratio.

Electrical conductivity determinations were made with a conductivity bridge on 1:1 soil-water mixtures. Iron and aluminum extractable in sodium dithionite-citrate were determined by atomic absorption spectrophotometry. Aluminum, carbon, and iron were extracted from probable spodic horizons with 0.1 molar sodium pyrophosphate. Determination of iron and aluminum was by atomic absorption, and the determination of extracted carbon was by the Walkley-Black wet combustion method.

Mineralogy of the clay fraction less than 2 microns was ascertained by x-ray diffraction. Peak heights at 18-angstrom, 14-angstrom, 7.2-angstrom, and 4.31-angstrom positions represent montmorillonite, interstratified expandable vermiculite or 14-angstrom intergrades, kaolinite, and quartz, respectively. Peaks were measured, added, and normalized to give the percent of soil minerals identified in the x-ray diffractograms. These percentage values do not indicate the absolute abundance of the minerals.

section "Soil Series and their Morphology." The soil samples were tested by the Florida Department of Transportation, Soils Laboratory, Bureau of Materials and Research.

The testing methods generally are those of the American Association of State Highway and Transportation Officials (AASHTO) *(1)* or the American Society for Testing and Materials (ASTM) *(2)*.

Table 19 contains engineering test data about some of the major soils in Lafayette County. These tests help to evaluate the soils for engineering purposes. The classifications given are based on data obtained by mechanical analysis and by tests to determine liquid limits and plastic limits.

The mechanical analyses were made by a combined sieve and hydrometer method. In this method, the various grain-size fractions are calculated on the basis of all the material in the soil sample, including that material coarser than 2 millimeters in diameter. The mechanical analyses used in this method should not be used in naming textural classes of soils.

Liquid limit and plasticity index indicate the effect of water on the strength and consistence of the soil material. As the moisture content of a clayey soil is increased from a dry state, the material changes from a semisolid to plastic state. If the moisture content is further increased, the material changes from a plastic to a liquid state. The plastic limit is the moisture content at which the soil material changes from a semisolid to a plastic state, and the liquid limit is the moisture content at which the soil material changes from a plastic to a liquid state. The plasticity index is the numerical difference between the liquid limit and the plastic limit. It indicates the range in moisture content within which a soil material is plastic. The

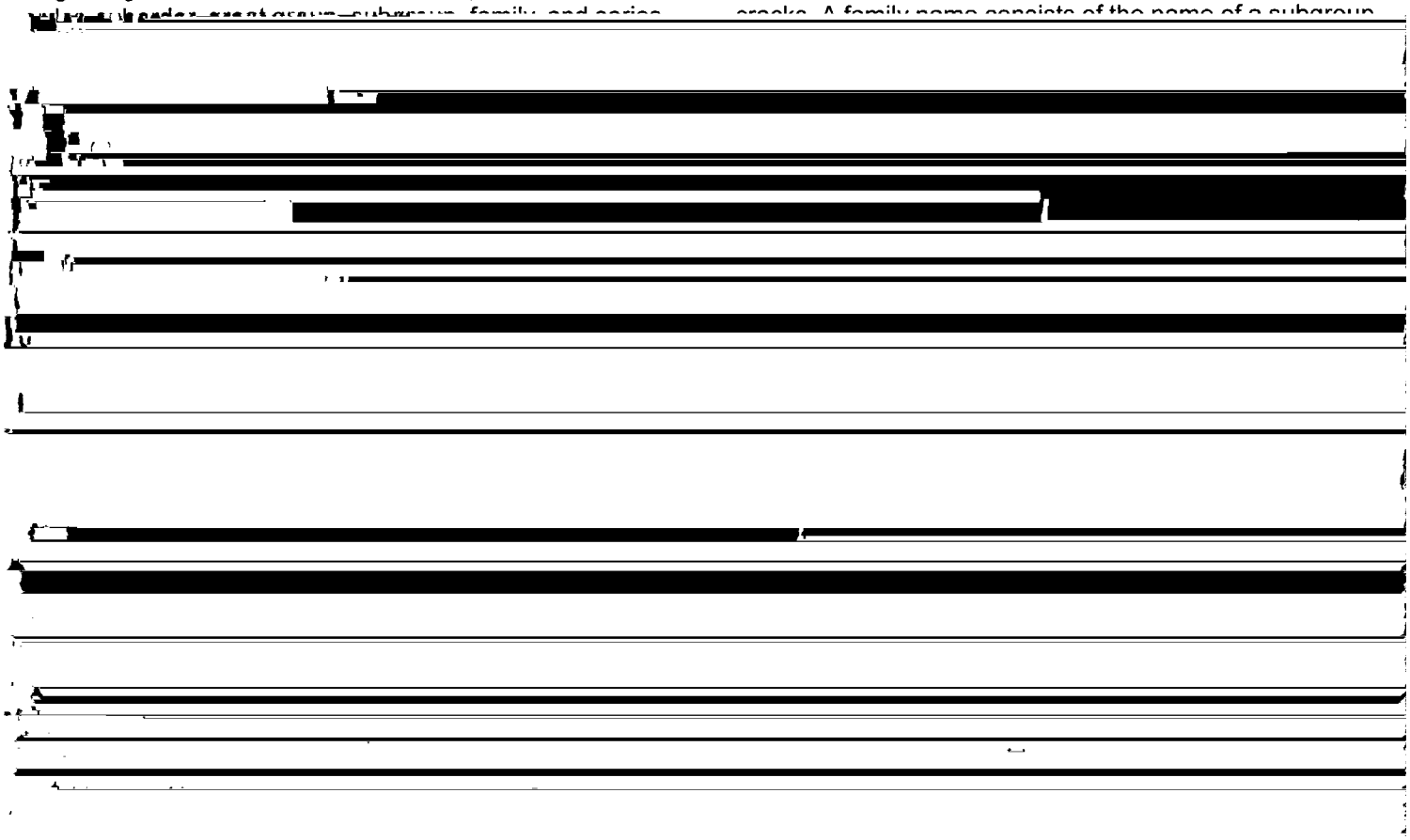
Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(25)*. Beginning with the broadest, these categories are the order, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or on laboratory measurements. Table 20 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Eleven soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Entisol.

SUBORDER. Each order is divided into suborders, primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquent *(Aqu*, meaning water, plus

characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup



preceded by terms that indicate soil properties. An example is fine-loamy, mixed, nonacid, mesic Typic Haplaquents.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. There can be some variation in the texture of the surface layer or of the substratum within a series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in

have sandy A and E horizons that are 40 to 79 inches thick and are underlain by a loamy Bt horizon. Hurricane soils have a Bh horizon. Ridgewood soils are sandy to a depth of 80 inches.

Typical pedon of Albany fine sand, in an area of Albany-Ridgewood complex, 0 to 5 percent slopes; about 500 feet south and 1,000 feet west of the northeast corner of sec. 19, T. 5 S., R. 12 E.

Ap—0 to 6 inches; dark gray (10YR 4/1) fine sand; weak fine granular structure; very friable; many fine medium and large roots; moderately acid; clear wavy boundary.

E1—6 to 12 inches; yellowish brown (10YR 5/4) fine sand; single grained; loose; many fine medium and few large roots; few charcoal fragments; few fine roots; slightly acid; gradual wavy boundary.

E2—12 to 21 inches; brown (10YR 5/3) fine sand; single grained; loose; slightly acid; gradual wavy boundary.

E3—21 to 25 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; common fine roots; slightly acid; gradual wavy boundary.

E4—25 to 64 inches; light gray (10YR 7/1) fine sand; few fine faint yellowish brown and gray mottles; single grained; loose; slightly acid; clear wavy boundary.

Btg1—64 to 72 inches; light gray (10YR 7/1) fine sandy loam; common medium prominent yellowish brown (10YR 5/6 and 5/8) mottles; weak medium subangular

Blanton Series

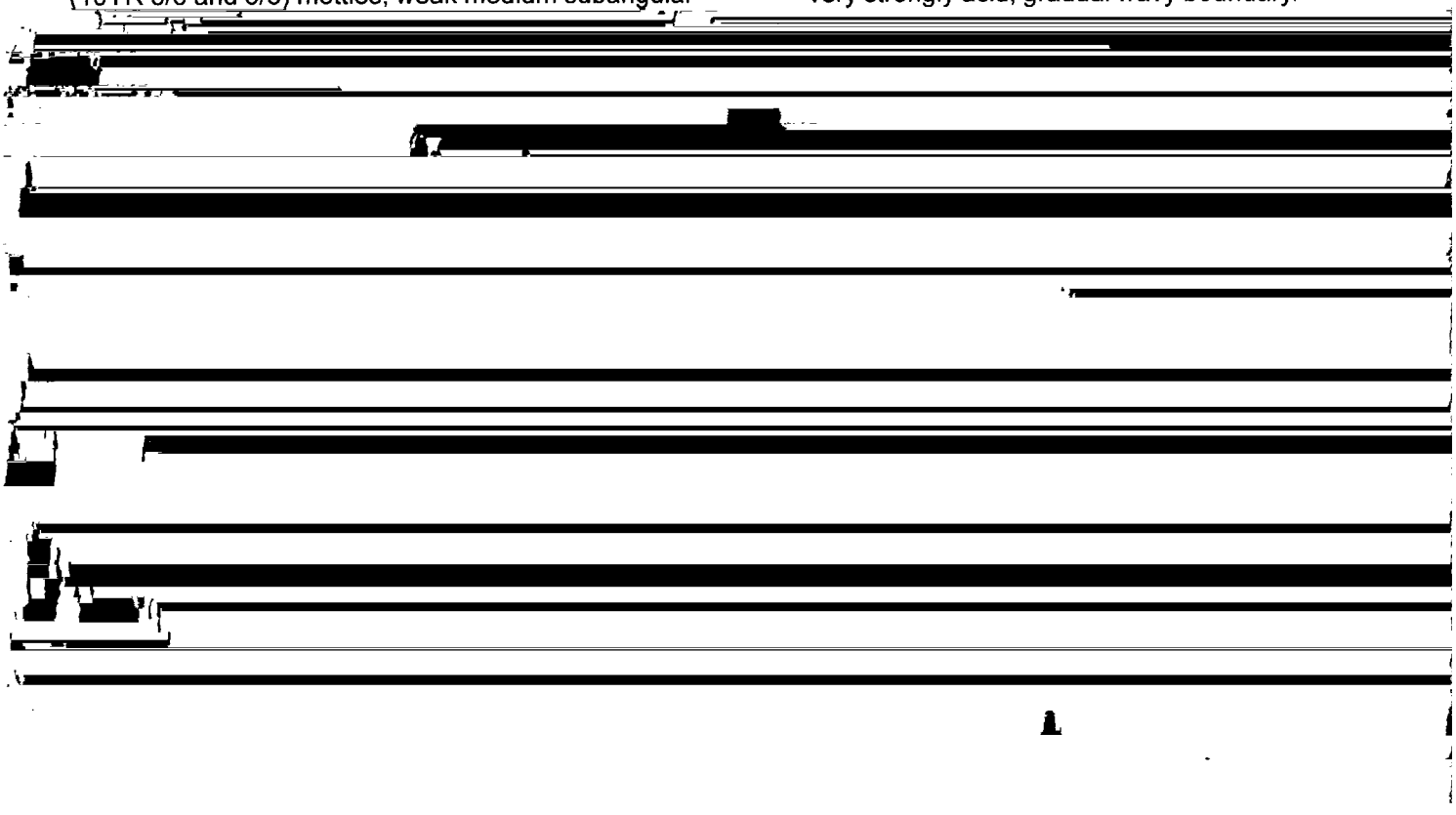
The Blanton series consists of moderately well drained soils on uplands. Slopes range from 0 to 5 percent. These soils have a sandy texture to a depth of 40 inches or more and are loamy below that depth. They formed in beds of sandy and loamy marine deposits. These soils are loamy, siliceous, thermic Grossarenic Paleudults.

Blanton soils are geographically associated with Albany, Ortega, Otela, Penney, and Ridgewood soils. Albany and Ridgewood soils are somewhat poorly drained. Otela soils have limestone below a depth of 60 inches. Ortega, Penney, and Ridgewood soils have a sandy texture to a depth of more than 80 inches. Penney soils have lamellae below a depth of 50 inches. They are excessively drained.

Typical pedon of Blanton fine sand, in an area of Blanton-Ortega complex, 0 to 5 percent slopes; about 500 feet south of a graded road and 1,500 feet east of a graded road, and about 3,500 feet north and 500 feet east of the southwest corner of sec. 33, T. 5 S., R. 13 E.

A—0 to 6 inches; dark gray (10YR 4/1) fine sand; weak fine granular structure; very friable; strongly acid; clear wavy boundary.

E1—6 to 29 inches; light yellowish brown (10YR 6/4) fine sand; single grained; few fine roots; loose; few clean white (10YR 8/1) sand grains; few charcoal fragments; very strongly acid; gradual wavy boundary.



The Bt horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 8. In places, the horizon has gray, yellow, brown, or red mottles. Gray mottles, which indicate wetness, are within the upper 10 inches of the Bt horizon. Texture is loamy fine sand, sandy loam, or sandy clay loam.

The Btg horizon has hue of 5Y to 7.5YR, value of 5 to 8, and chroma of 1 or 2; or it is dominated by chroma of 2 or less and is mottled in varying shades of brown, yellow, red, and gray. Texture is sandy loam, fine sandy loam, or sandy clay loam.

Chaires Series

The Chaires series consists of poorly drained soils on flatwoods and very poorly drained soils in depressions. Slopes range from 0 to 2 percent. These soils have a sandy texture to a depth of 40 inches or more and have a loamy subsoil. They formed in thick beds of sandy and loamy marine sediments. These soils are sandy, siliceous, thermic Alfic Alaquods.

Chaires soils are geographically associated with Harbeson, Leon, Lynn Haven, Oaky, Tooles, and Wesconnett soils. Harbeson, Oaky, and Tooles soils do not have a spodic horizon. Oaky soils have an argillic horizon less than 20 inches deep, and Tooles soils have fractured limestone at a depth of 41 to 60 inches. Leon, Lynn Haven, and Wesconnett soils do not have an argillic horizon. Harbeson, Lynn Haven, and Wesconnett soils are very poorly drained.

Typical pedon of Chaires fine sand, in an area of Chaires-Chaires, depressional complex; about 2,500 feet west of Florida Highway 51 and 50 feet south of a trail road, and about 2,200 feet north and 3,200 feet east of the southwest corner of sec. 10, T. 7 S., R. 10 E.

Ap—0 to 8 inches; black (10YR 2/1) fine sand; weak fine granular structure; friable; many fine roots; extremely acid; clear wavy boundary.

E1—8 to 15 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; common very dark gray (10YR 3/1) vertical streaks; common and few roots; extremely acid; clear wavy boundary.

E2—15 to 24 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; common medium distinct very dark gray (10YR 3/1) root stains; common light gray and white sand streaks; common medium roots; very strongly acid; abrupt wavy boundary.

Bh1—24 to 28 inches; black (10YR 2/1) loamy fine sand; weak medium subangular blocky structure; friable; few fine and medium roots; extremely acid; clear wavy boundary.

Bh2—28 to 32 inches; dark brown (7.5YR 2/2) fine sand; distinct very dark grayish brown (10YR 3/2) streaks along root channels; few fine roots; extremely acid; gradual wavy boundary.

E'—32 to 46 inches; brown (10YR 5/3) fine sand; weak fine granular structure; very friable; strongly acid; gradual wavy boundary.

Btg—46 to 72 inches; grayish brown (10YR 5/2) sandy clay loam; common medium distinct dark brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; moderately acid; gradual wavy boundary.

The thickness of the solum is 60 to 80 inches or more. Reaction ranges from extremely acid to strongly acid in the A and Bh horizons and strongly acid to neutral in the Btg horizon.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 2 or less or is neutral and has value of 2 to 4. It ranges from 3 to 8 inches thick. Texture is fine sand and mucky fine sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Some pedons have mottles in shades of gray, yellow, and brown. Texture is sand or fine sand. The horizon ranges from 7 to 22 inches thick.

The Bh horizon has hue of 5YR to 10YR, value of 2 to 4, and chroma of 1 or 2 or is neutral and has value of 2. Texture is sand, fine sand, or loamy fine sand. The horizon is 5 to 39 inches thick.

The BE horizon, if it occurs, has hue of 10YR, value of 4, and chroma of 3 or 4. Texture is sand or find.

The E' horizon has hue of 10YR, value of 5 to 7, and chroma of 2 to 4. Texture is sand or fine sand.

The Btg horizon has hue of 10YR, value of 4 or 6, and chroma of 1 or 2. Texture is sandy loam, fine sandy loam, or sandy clay loam. Some pedons have texture of sandy clay in the lower part. Many pedons have few to common mottles in shades of red, brown, yellow, or gray.

Clara Series

The Clara series consists of very poorly drained soils in low flatwoods, on flood plains, and on depressions. Slopes are 0 to 2 percent. These soils have a sandy texture to a depth of more than 80 inches. They formed in beds of sandy marine sediments. These soils are siliceous, thermic Spodic Psammaquents.

Clara soils are geographically associated with Chaires, Leon, Lynn Haven, and Wesconnett soils. Chaires soils have an argillic horizon below the Bh horizon. Leon, Lynn Haven, and Wesconnett soils do not have an argillic horizon. Leon soils are poorly drained.

Typical pedon of Clara mucky fine sand, in an area of Clara and Meadowbrook soils, frequently flooded;

of a trail road, and about 1,500 feet south and 1,200 feet east of the northwest corner of sec. 13, T. 7 S., R. 11 E.

A—0 to 6 inches; black (10YR 2/1) mucky fine sand; weak fine granular structure; friable; many fine roots; very strongly acid; clear wavy boundary.
E—6 to 18 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; common very dark gray (10YR 3/1) streaks; common and few roots; very strongly acid; clear wavy boundary.
Bw1—18 to 23 inches; dark brown (10YR 4/3) fine sand; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.
Bw2—23 to 48 inches; brown (10YR 5/3) fine sand; single grained; loose; common medium distinct very dark gray (10YR 3/1) root stains; common light gray and white vertical streaks of sand; few very fine roots; very strongly acid; gradual wavy boundary.
C—48 to 80 inches; light brownish gray (10YR 6/2) fine sand; common medium distinct dark yellowish brown pore linings along root channels; single grained; loose; few fine roots; strongly acid.

The thickness of the solum ranges from 20 to 60 inches. The soil depth is more than 80 inches. Reaction ranges from extremely acid to moderately alkaline throughout the profile.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 2 or less if rubbed. Texture is fine sand or mucky fine sand. Some pedons have a layer of muck, up to 3 inches thick, at the surface.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 1 to 3 or has value of 5 and chroma of 1 or 2. Many pedons have vertical streaks in shades of brown or gray in the E horizon. If chroma is 1, the pedon does not always have mottles. Texture is sand or fine sand. The combined thickness of the A and E horizons is 8 to 39 inches.

The Bw horizon has hue of 10YR, value of 4 or 5, and chroma of 3 to 6 or has value of 6 or 7 and chroma of 6. If chroma is less than 6 in the upper part of the Bw horizon, the color is more than 1 unit of value darker than the overlying E horizon. Some pedons have small splotches, streaks, or discontinuous lenses of organically stained material with value of less than 4 in the upper part of the Bw horizon. Mottles, if they occur, are in shades of brown, yellow, or gray. Texture is sand or fine sand.

The C horizon has hue of 10YR, value of 5, and chroma of 2 or less or has value of 6 or 7 and chroma of 3 or less. Mottles are in shades of brown or yellow. Texture is sand, fine sand, or loamy fine sand.

Dorovan Series

The Dorovan series consists of very poorly drained, organic soils on the flood plains and depressions in the flatwoods. Slopes range from 0 to 1 percent. These soils formed in thick, highly decomposed, acid-organic materials underlain by sandy or loamy materials. These soils are dysic, thermic Typic Medisaprists.

Dorovan soils are geographically associated with Pamlico, Leon, and Surrency soils. All of these soils except Pamlico soils are of mineral origin. Leon soils are poorly drained. They have a Bh horizon within a depth of 30 inches. Pamlico soils have sapric material less than 50 inches thick overlying sandy material. Surrency soils have an argillic horizon at a depth of 20 to 40 inches.

Typical pedon of Dorovan muck, in an area of Pamlico and Dorovan soils, depressional; about 1,000 feet north of a trail road and 1,500 feet west of a trail road, and about 3,500 feet north and 1,500 feet east of the southwest corner of sec. 10, T. 7 S., R. 13 E.

Oa1—0 to 30 inches; black (N 2/0) muck; 33 percent fiber unrubbed, less than 10 percent fiber rubbed; massive; very friable; fibers are from leaves, twigs, and roots; extremely acid; gradual wavy boundary.
Oa2—30 to 45 inches; black (N 2/0) muck; about 50 percent fiber unrubbed, less than 10 percent fiber rubbed; massive; very friable; many fine and coarse roots; extremely acid; clear wavy boundary.
Oa3—45 to 57 inches; dark reddish brown (5YR 2.5/2) muck; about 30 percent fiber unrubbed, less than 10 percent fiber rubbed; massive; nonsticky; many fine roots; less than 10 percent mineral matter; extremely acid; clear wavy boundary.
Cg—57 to 80 inches; gray (10YR 6/1) fine sand; single grained; nonsticky; loose; strongly acid.

The solum ranges from 51 to more than 80 inches thick. Reaction is extremely acid in the organic layers. It is strongly acid or very strongly acid in the Cg horizon.

The Oa horizon has hue of 5YR to 10YR, value of 2 or 3, and chroma of 3 or less.

The Cg horizon, if it occurs, has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Texture is sandy or loamy material. The Cg horizon is at a depth of more than 51 inches.

Eunola Series

The Eunola series consists of moderately well drained soils on terraces. Slopes range from 0 to 5 percent. These soils formed in sandy and loamy marine and fluvial sediments. They are fine-loamy, siliceous, thermic Aquic Hapludults.

Eunola soils are geographically associated with Blanton, Ortega, and Penney soils. Blanton soils have a sandy texture to a depth of 40 inches or more. Ortega and Penney soils have a sandy texture to a depth of more than 80 inches. Penney soils have lamellae below a depth of 50 inches and are excessively drained.

Typical pedon of Eunola fine sand, 0 to 5 percent slopes, about 400 feet north of a trail road and 100 feet west of a trail road, and about 1,000 feet north and 2,000 feet east of the southwest corner of sec. 28, T. 5 S., R. 13 E.

A—0 to 7 inches; very dark grayish brown (10YR 3/2) fine sand; weak fine granular structure; very friable; strongly acid; clear wavy boundary.

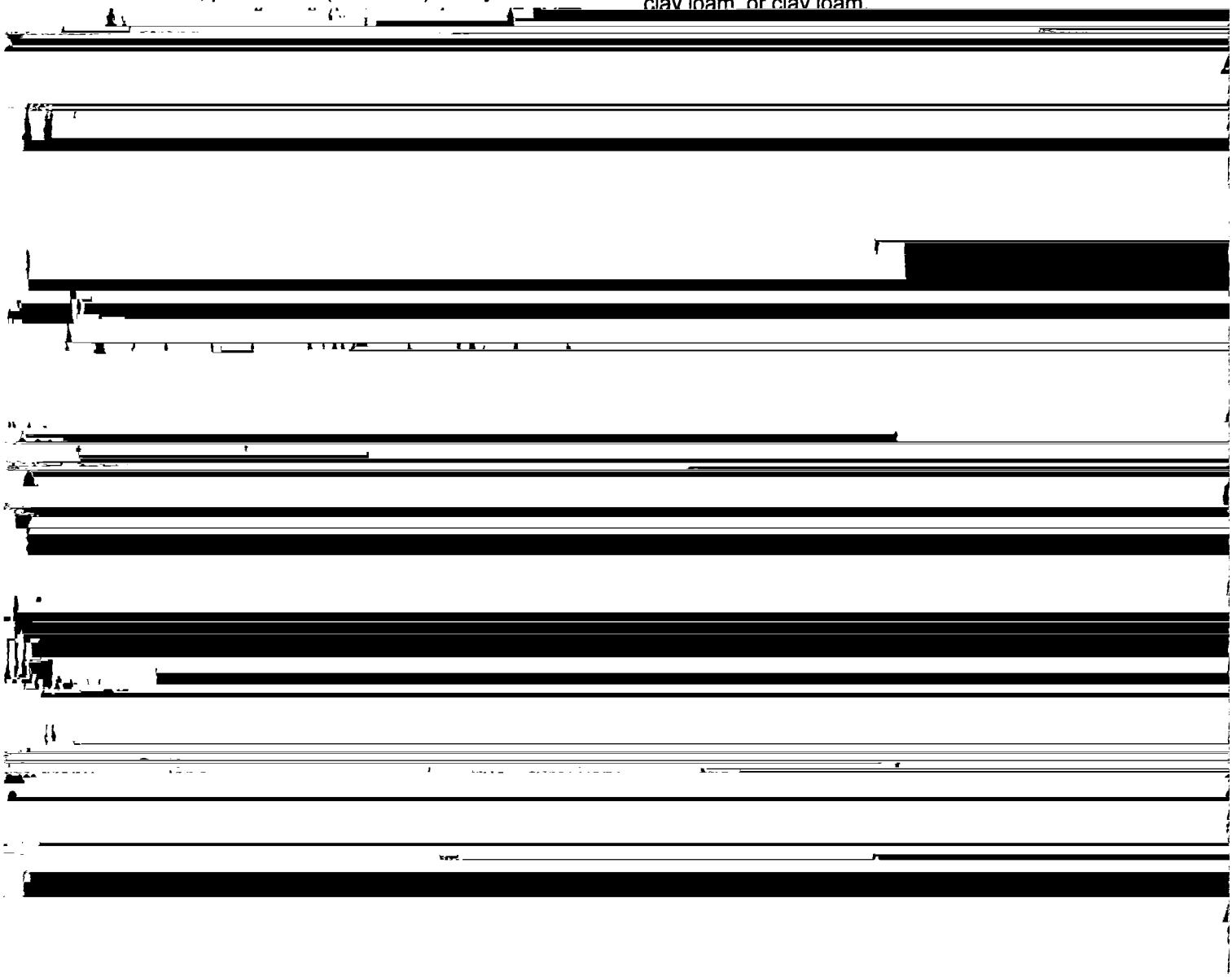
E—7 to 18 inches; pale brown (10YR 6/3) loamy fine

The solum ranges from 40 to more than 60 inches thick. Reaction is very strongly acid or strongly acid.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2. It ranges from 6 to 8 inches thick. Texture is loamy fine sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 2 to 4. Some pedons have mottles in shades of yellow or brown. The thickness of the E horizon ranges from 0 to 13 inches. Texture is loamy sand or loamy fine sand.

The Bt horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 8. It has mottles in shades of gray, yellow, brown, or red. In some pedons, the lower part of the Bt horizon is mottled and does not have a dominant matrix hue. Texture of the Bt horizon is fine sandy loam, sandy clay loam, or clay loam.



north and 1,000 feet east of the southwest corner of sec. 34, T. 7 S., R. 14 E.

A—0 to 7 inches; dark gray (10YR 4/1) fine sand; weak fine granular structure; very friable; strongly acid; clear wavy boundary.
E1—7 to 19 inches; brown (10YR 5/3) fine sand; single grained; loose; few clean white (10YR 8/1) sand grains; few charcoal fragments; few fine roots; strongly acid; gradual wavy boundary.
E2—19 to 26 inches; very pale brown (10YR 7/4) fine sand; single grained; loose; very strongly acid; gradual wavy boundary.
Bt1—26 to 40 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium distinct light brownish gray (10YR 6/2) and strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; very friable; strongly acid; gradual wavy boundary.
Bt2—40 to 51 inches; light brownish gray (10YR 6/2) sandy loam; common medium prominent brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; firm; strongly acid.
BC—51 to 60 inches; white (10YR 8/2) loamy fine sand; common medium prominent brownish yellow (10YR 6/6) mottles; weak medium granular structure; friable; strongly acid; gradual wavy boundary.
C—60 to 80 inches; white (10YR 8/2) fine sand; common medium faint light gray (10YR 7/2) mottles; single grained; loose; strongly acid.

The solum ranges from 45 to 60 inches thick. Reaction is very strongly acid to strongly acid throughout the profile.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. It ranges from 5 to 12 inches thick.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 6. Some pedons have mottles in shades of gray, yellow, or brown. Other pedons have few to many fine and medium pockets of clean sand grains. The thickness of the E horizon ranges from 13 to 35 inches. Texture is fine sand or loamy fine sand.

The Bt1 horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 6. In places, the Bt1 horizon has gray, [illegible] mottles. The gray mottles which

Harbeson Series

The Harbeson series consists of very poorly drained soils in depressions. Slopes range from 0 to 1 percent. The soils formed in beds of sandy and loamy marine sediments. These soils are loamy, siliceous, thermic, Grossarenic Umbraqualfs.

Harbeson soils are geographically associated with Leon, Lynn Haven, and Pamlico soils. Leon and Lynn Haven soils have a Bh horizon. Pamlico soils have a muck surface layer that is 16 to 38 inches thick.

Typical pedon of Harbeson mucky fine sand, in an area of Rawhide and Harbeson soils, depressional; about 1,500 feet south of a trail road and 1,200 feet west of a trail road, and about 200 feet north and 500 feet west of the southeast corner of sec. 8, T. 6 S., R. 10 E.

A—0 to 18 inches; black (10YR 2/1) mucky fine sand; weak medium granular structure; very friable; many fine roots; slightly acid; clear wavy boundary.
Eg1—18 to 36 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; many fine roots; neutral; gradual wavy boundary.
Eg2—36 to 55 inches; light gray (10YR 7/2) fine sand; single grained; loose; neutral; gradual wavy boundary.
Btg—55 to 80 inches; gray (5Y 6/1) sandy clay loam; moderate medium subangular blocky structure; friable; moderately alkaline.

The thickness of the solum is 80 inches or more. Reaction ranges from very strongly acid to mildly alkaline in the A and Eg horizons and from moderately acid to moderately alkaline in the Btg horizon.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. It ranges from 10 to 22 inches thick.

The E or Eg horizon has hue of 10YR, value of 4 to 7, and chroma of 4 or less. Some pedons have mottles in shades of gray and brown. Texture is sand, fine sand, or loamy fine sand. The horizon ranges from 33 to 42 inches thick.

The Btg horizon has hue of 10YR to 5BG, value of 4 to 6, and chroma of 2 or less. Some pedons have mottles in shades of gray. Texture is sandy loam, fine sandy loam, or [illegible]

Albany, Blanton, Leon, Ortega, and Ridgewood soils. Albany and Blanton soils have an argillic horizon within a depth of 80 inches. Blanton soils are moderately well drained. Leon soils have a Bh horizon at a depth of less than 30 inches. They are poorly drained. Ortega and Ridgewood soils do not have a Bh horizon within a depth of 80 inches.

Typical pedon of Hurricane fine sand, in an area of Ridgewood-Hurricane complex, 0 to 5 percent slopes; about 100 feet west of a trail road and 100 feet south of a trail road, and about 2,000 feet north and 1,000 feet east of the southwest corner of sec. 34, T. 4 S., R. 11 E.

Ap—0 to 5 inches; very dark gray (10YR 3/1) fine sand; single grained; very friable; many fine medium and large roots; neutral; clear wavy boundary.

E1—5 to 16 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; many fine medium and few large roots; common medium distinct black (10YR 2/1) charcoal fragments; neutral; gradual wavy boundary.

E2—16 to 25 inches; brown (10YR 5/3) fine sand; common medium distinct yellowish brown (10YR 5/6) mottles and light brownish gray (10YR 6/2) uncoated sand grains; single grained; loose; neutral; clear wavy boundary.

E3—25 to 51 inches; pale brown (10YR 6/3) fine sand; common medium distinct yellowish brown (10YR 5/6 and 5/8) mottles; single grained; loose; common fine roots; neutral; clear wavy boundary.

Bh1—51 to 54 inches; dark brown (7.5YR 4/2) fine sand; single grained; loose; moderately acid; clear wavy boundary.

Bh2—54 to 65 inches; dark reddish brown (5YR 2.5/2) fine

well coated with organic matter. Texture is sand, fine sand, or loamy fine sand.

Leon Series

The Leon series consists of poorly drained soils on broad areas of the flatwoods. Slopes range from 0 to 2 percent. The soils formed in thick beds of sandy marine sediments. These soils are sandy, siliceous, thermic Aeric Alaquods.

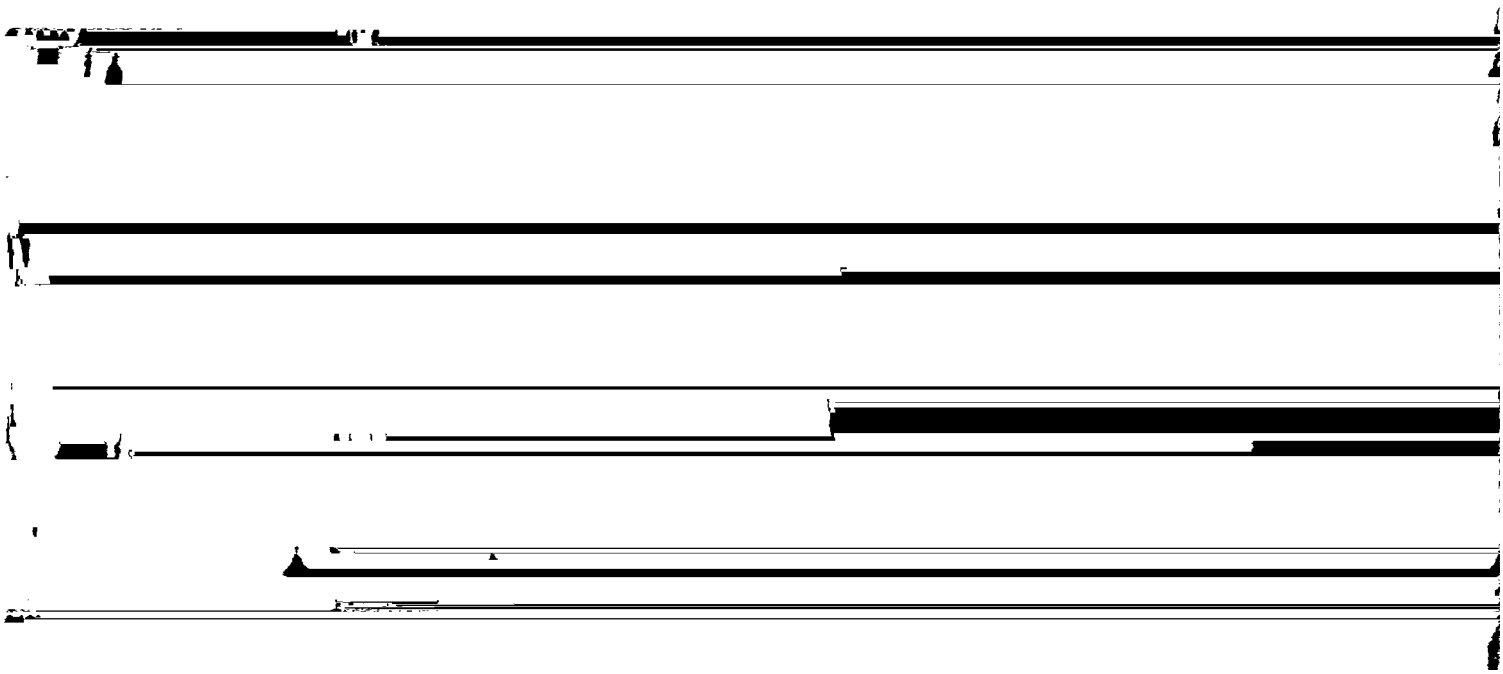
Leon soils are geographically associated with Chaires, Hurricane, Lynn Haven, Ridgewood, and Wesconnett soils. Chaires soils have an argillic horizon below the Bh horizon. Hurricane and Ridgewood soils are somewhat poorly drained. Ridgewood soils do not have a Bh horizon. Hurricane soils have a Bh horizon at a depth of more than 50 inches. Lynn Haven and Wesconnett soils have a dark A horizon that is thicker than that of the Leon soils. They are very poorly drained.

Typical pedon of Leon fine sand, about 500 feet north of a trail road and 300 feet east of a trail road, and about 500 feet north and 3,500 feet east of the southwest corner of sec. 27, T. 5 S., R. 10 E.

Ap—0 to 4 inches; black (10YR 2/1) fine sand; weak fine granular structure; friable; many fine roots; extremely acid; clear wavy boundary.

E—4 to 10 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; common very dark gray (10YR 3/1) streaks; common and few roots; very strongly acid; clear wavy boundary.

Bh—10 to 17 inches; dark reddish brown (5YR 2/2) fine



(10YR 5/4) mottles; weak fine subangular blocky structure; friable; strongly acid.

Reaction ranges from extremely acid to slightly acid throughout the profile.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 2 or less. It ranges from 2 to 8 inches thick.

The E horizon has hue of 10YR or 2.5Y, value of 6 to 8, and chroma of 1 or 2. Some pedons have mottles in shades of gray, yellow, and brown. Texture is sand or fine sand. The horizon ranges from 4 to 22 inches thick.

The Bh horizon has hue of 10YR, value of 2 to 4, and chroma of 1 to 3. Texture is sand, fine sand, or loamy fine sand. The horizon is 5 to 15 inches thick.

The BE horizon, if it occurs, has hue of 10YR or 2.5Y, value of 4 to 5, and chroma of 2 to 4. Texture is sand or fine sand. The horizon is 0 to 7 inches thick.

In pedons that have E' and B'h horizons, the colors are the same as those described for the E and Bh horizons.

Some pedons have a C horizon that has hue of 7.5YR or 10YR, value of 4 to 8, and chroma of 3 or 4.

Some pedons do not have a bisequm of E' and B'h horizons below the Bh horizon.

Lynn Haven Series

The Lynn Haven series consists of very poorly drained

Bh—19 to 27 inches; black (5YR 2/1) fine sand; weak fine granular structure; friable; sand grains coated with organic matter; extremely acid; gradual wavy boundary.

BE—27 to 34 inches; dark yellowish brown (10YR 4/4) fine sand; single grained; loose; few fine and medium roots; strongly acid; clear wavy boundary.

E'—34 to 52 inches; yellowish brown (10YR 5/4) fine sand; few medium distinct dark yellowish brown (10YR 3/6) mottles; single grained; loose; few fine and medium roots; strongly acid; gradual wavy boundary.

B'h—52 to 80 inches; dark reddish brown (5YR 3/2) fine sand; weak fine granular structure; friable; sand grains coated with organic matter; very strongly acid.

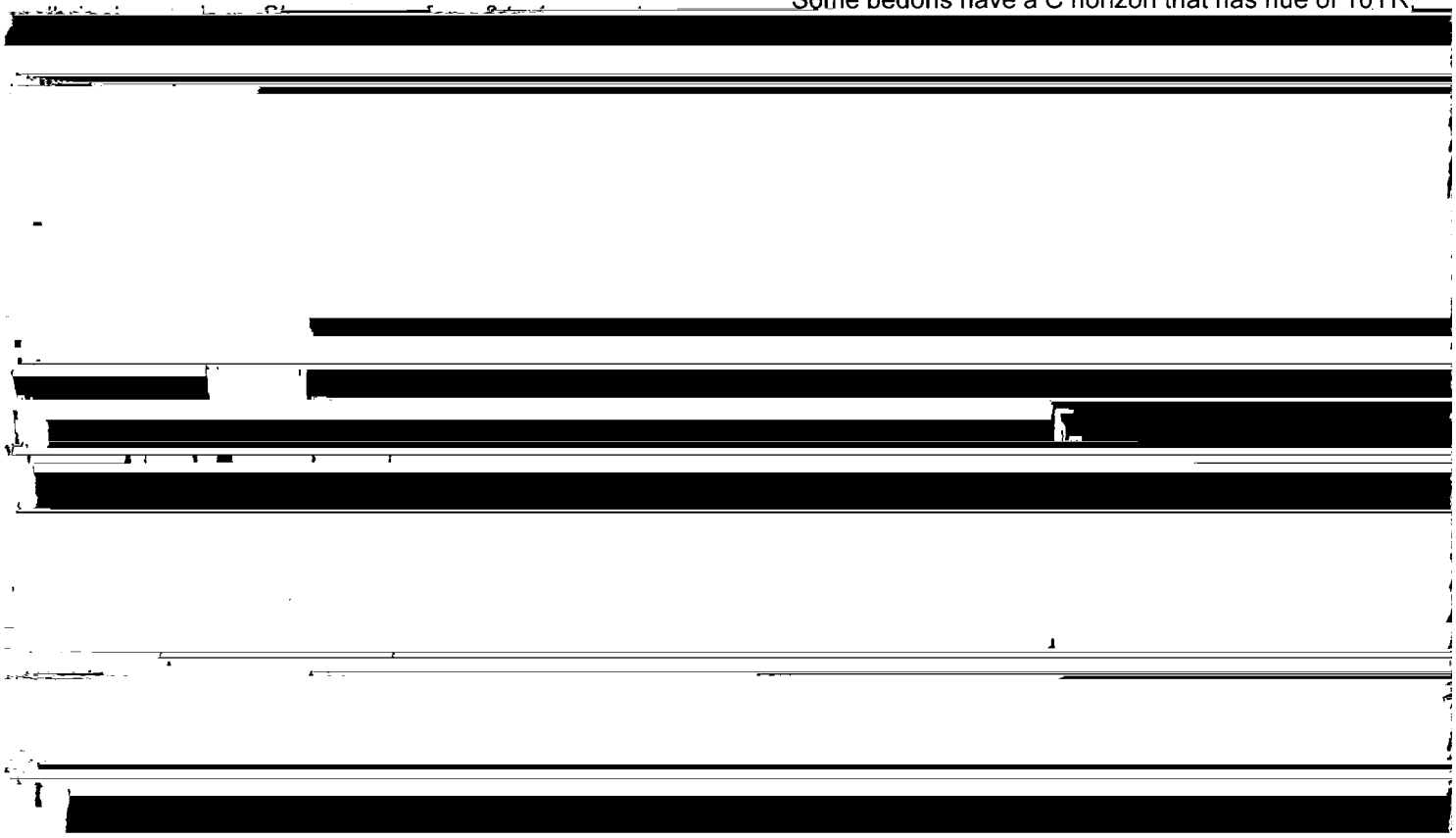
Reaction is extremely acid to strongly acid throughout the profile.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or is neutral with these values. It ranges from 8 to 20 inches thick.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 2 or less. Texture is sand or fine sand. The horizon is 2 to 18 inches thick.

The Bh and B'h horizons have hue of 5YR to 10YR, value of 2 or 3, and chroma of 1 to 3. Sand grains are well coated with organic matter and are weakly cemented in parts. Texture is sand, fine sand, or loamy fine sand.

Some pedons have a C horizon that has hue of 10YR,



E1—6 to 10 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; common very dark gray (10YR 3/1) streaks; extremely acid; clear wavy boundary.

E2—10 to 25 inches; light gray (10YR 7/1) fine sand; single grained; loose; extremely acid; abrupt wavy boundary.

Bh1—25 to 29 inches; very dark grayish brown (10YR 3/2) fine sand; weak fine subangular blocky structure; friable; weakly cemented in parts; sand grains coated with organic matter; few fine roots; very strongly acid; gradual wavy boundary.

Bh2—29 to 37 inches; very dark brown (10YR 2/2) fine sand; few fine distinct strong brown and moderate medium prominent black (5YR 2.5/1) mottles; [redacted]

soils are loamy, siliceous, thermic Grossarenic Endoaqualfs.

Meadowbrook soils are geographically associated with Albany, Leon, Sapelo, and Surrency soils. Albany soils are somewhat poorly drained. Leon soils are sandy throughout the profile. They have a spodic horizon. Sapelo soils also have a spodic horizon. Surrency soils have an argillic horizon at a depth of 20 to 40 inches. They are very poorly drained.

Typical pedon of Meadowbrook fine sand, in an area of Meadowbrook-Chaires complex; about 300 feet east of a trail road and 1,700 feet south of a graded road, and about 700 feet south and 2,300 feet east of the northwest corner of sec. 36, T. 7 S., R. 10 E.

A—0 to 8 inches; very dark gray (10YR 3/1) fine sand;

[redacted]

Oaky Series

The Oaky series consists of poorly drained soils on broad areas of the flatwoods. Slopes range from 0 to 2 [redacted]

sand or fine sand. The horizon ranges from 0 to 12 inches thick.

The Btg horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2. Pedons that have chroma of 2 [redacted]

[redacted]

Figure 13.—A typical profile of Lynn Haven mucky fine sand. Depth is marked in meters on the left side of the tape and in feet on the right.

Figure 14.—A typical profile of Rawhide mucky fine sand. Depth is marked in meters on the left and feet on the right.

Figure 15.—A typical profile of Ridgewood fine sand. Depth is marked in meters on the left and feet on the right.

Figure 16.—A typical profile of Sapelo fine sand. Depth is marked in meters on the left and feet on the right.

between the depths of 10 and 40 inches. Reaction is extremely acid to slightly acid in all horizons.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2. It ranges from 3 to 6 inches thick.

The upper part of the C horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 8. The white or light gray mottles are a result of uncoated sand grains and are not indicative of wetness. The lower part of the C horizon has hue of 10YR, value of 5 to 8, and chroma of 1 or 2. It has mottles and low chroma that are the result of wetness.

Otela Series

The Otela series consists of moderately well drained soils on uplands. Slopes range from 0 to 5 percent. The soils formed in sandy and loamy marine sediments on karst topography. In places, they are underlain by limestone. These soils are loamy, siliceous, thermic Grossarenic Paleudalfs.

Otela soils are geographically associated with Albany, Ortega, Penney, and Ridgewood soils. Ridgewood soils are somewhat poorly drained. Ortega, Penney, and Ridgewood soils have a sandy texture to a depth of more than 80 inches. Penney soils have lamellae below a depth of 50 inches. They are excessively drained.

Typical pedon of Otela fine sand, in an area of Otela-Penney complex, 0 to 5 percent slopes; about 1,500 feet north of Florida Highway 53 and 1,000 feet east of a graded road, and about 2,000 feet north and 3,500 feet east of the southwest corner of sec. 34, T. 4 S., R. 11 E.

A—0 to 6 inches; dark grayish brown (10YR 4/2) fine sand; weak fine granular structure; very friable; strongly acid; clear wavy boundary.

E1—6 to 21 inches; brown (10YR 5/3) fine sand; single grained; loose; few clean white (10YR 8/1) sand grains; few charcoal fragments; few fine roots; very strongly acid; gradual wavy boundary.

E2—21 to 31 inches; pale brown (10YR 6/3) fine sand; few medium prominent yellow (10YR 6/6) mottles; single grained; loose; strongly acid; gradual wavy boundary.

E3—31 to 40 inches; very pale brown (10YR 7/4) fine sand; common medium distinct white (10YR 8/1) clean sand grains; single grained; loose; strongly acid; gradual wavy boundary.

E4—40 to 60 inches; yellowish brown (10YR 5/8) fine sand; single grained; loose; white (10YR 8/2) clean sand grains; strongly acid; abrupt wavy boundary.

Bt1—60 to 65 inches; yellowish brown (10YR 5/4) sandy loam; weak medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.

Bt2—65 to 75 inches; yellowish brown (10YR 5/4) sandy loam; common medium distinct white (10YR 8/1) mottles; weak medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.

Btg—75 to 80 inches; light gray (10YR 7/2) sandy clay loam; common medium distinct yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; very friable; strongly acid.

The thickness of the solum and the depth to bedrock range from 60 to more than 80 inches. Reaction is very strongly acid to neutral in the A and E horizons, from extremely acid to mildly alkaline in the upper part of the Bt horizon, and from extremely acid to moderately alkaline in the lower part of the Bt horizon.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2. It ranges from 6 to 10 inches thick.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 or 8. Some pedons have mottles in shades of yellow or brown. Other pedons have few to many fine and medium pockets of clean sand grains. The thickness of the E horizon ranges from 33 to 65 inches. Texture is fine sand or sand.

The Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 6 or has value of 7 and chroma of 3 to 6. In places, this horizon has gray, white, yellow, brown, or red mottles. Gray mottles, which are indicative of wetness, are within the upper 10 inches of the Bt horizon. Texture is sandy loam or sandy clay loam.

The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Some pedons have mottles in shades of gray, yellow, or brown. Mottles in shades of red may also be present. Texture is sandy loam, sandy clay loam, or sandy clay. Some pedons have a clayey 2Btg horizon. In some pedons, about 5 percent gravel or cobble-sized limestone or chert fragments may be in the lower part of this horizon.

In some pedons, a BC horizon is below the Bt or Btg horizon at a depth of more than 60 inches. It has hue of 10YR, value of 5 or 6, and chroma of 6 or has value of 7 or 8 and chroma of 3 to 6. Texture is fine sand or loamy fine sand.

Ousley Series

The Ousley series consists of somewhat poorly drained soils on terraces and flood plains. Slopes range from 0 to 5 percent. The soils formed in beds of sandy fluvial marine deposits. These soils are thermic, uncoated, Aquic Quartzipsamments.

Ousley soils are geographically associated with Albany, Garcon, Hurricane, Meadowbrook, and Ortega soils. Albany, Garcon, and Meadowbrook soils have a loamy Bt horizon. Meadowbrook soils are very poorly drained. Hurricane soils have a Bh horizon. Ortega soils are moderately well drained.

Typical pedon of Ousley fine sand, in an area of Albany-Ousley-Meadowbrook complex, 0 to 5 percent slopes, occasionally flooded; about 1,000 feet north of a trail road and 900 feet east of a graded road, and about 1,400 feet south and 1,000 feet west of the northeast corner of sec. 20, T. 6 S., R. 14 E.

A—0 to 4 inches; dark gray (10YR 4/1) fine sand; weak fine granular structure; very friable; many fine medium and large roots; strongly acid; clear wavy boundary.
C1—4 to 19 inches; pale brown (10YR 6/3) fine sand; single grained; loose; many fine medium and few large roots; few charcoal fragments; few fine roots; moderately acid; gradual wavy boundary.
C2—19 to 40 inches; brown (10YR 5/3) fine sand; few fine prominent yellowish brown (10YR 5/6) mottles; light brownish gray splotches; single grained; loose; few fine and medium charcoal fragments; strongly acid; gradual wavy boundary.
Cg1—40 to 57 inches; light brownish gray (10YR 6/2) fine sand; common medium prominent yellowish brown (10YR 5/6 and 5/8) and few fine prominent strong brown (7.5YR 5/6) mottles; single grained; loose; common fine roots; strongly acid; gradual wavy boundary.
Cg2—57 to 80 inches; light gray (10YR 7/2) fine sand; few fine prominent light yellowish brown (10YR 5/6) mottles; single grained; loose; strongly acid.

Texture is fine sand or sand to a depth of 80 inches or more. Reaction is very strongly acid to moderately acid in all horizons.

The A horizon has hue of 10YR, value of 2 to 7, and chroma of 1 or 2. It ranges from 0 to 16 inches thick. If the value is 2 or 3, the thickness of the horizon is less than 10 inches.

The upper part of the C horizon, to a depth of 40 inches, has hue of 10YR, value of 4 to 8, and chroma of 3 to 6. It has mottles in shades of red, yellow, brown and gray within a depth of 40 inches.

The C horizon below a depth of 40 inches has hue of 10YR, value of 4 to 8, and chroma of 1 to 4. It has few to many mottles in shades of gray, brown, or yellow.

Pamlico Series

The Pamlico series consists of very poorly drained, organic soils on flood plains and in depressions in the poorly drained. They have a Bh horizon within a depth of 30 inches. Dorovan soils have more than 51 inches of muck. Osier soils are poorly drained and are sandy to a depth of 80 inches or more. Surrency soils have an argillic horizon at a depth of 20 to 40 inches.

Typical pedon of Pamlico muck, in an area of Pamlico and Dorovan mucks, depressional; about 1,000 feet north of a trail road and 1,000 feet west of a trail road, and about 1,200 feet north and 500 feet west of the southeast corner of sec. 29, T. 5 S., R. 10 E.

Oa1—0 to 3 inches; black (7.5YR N 2/0) muck; 30 percent fiber unrubbed, 10 percent fiber rubbed; massive; very friable; fibers are from leaves, twigs, and roots; sodium pyrophosphate color is light yellowish brown (10YR 6/4); extremely acid; gradual wavy boundary.
Oa2—3 to 22 inches; black (10YR 2/1) muck; less than 5 percent fiber after rubbing; massive; sodium pyrophosphate color is dark yellowish brown (10YR 4/4); extremely acid; clear wavy boundary.
Cg—22 to 80 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; very strongly acid.

The Oa horizon has hue of 10YR or 7.5YR, value of 2 or 3, and chroma of 1 or 2 or is neutral in hue and has value of 2 or 3. The content of fiber is 30 percent or less before rubbing and less than 10 percent after rubbing. Reaction is extremely acid. The horizon is 16 to 51 inches thick.

The Cg horizon has hue of 10YR, value of 3 to 6, and chroma of 1 or 2 or is neutral in hue. Texture is sand or fine sand. Reaction is extremely acid to strongly acid.

Pantego Series

The Pantego series consists of very poorly drained soils in depressions and on flood plains in the flatwoods. Slopes range from 0 to 1 percent. The soils formed in sandy, loamy, and clayey deposits. These soils are fine-loamy, siliceous, thermic Umbric Paleaquults.

Pantego soils are geographically associated with Chaires, Leon, Pamlico, and Wesconnett soils. Chaires, Leon, and Wesconnett soils have a spodic horizon. Pamlico soils have a muck surface layer more than 16 inches thick.

Typical pedon of Pantego mucky loamy sand, in an area of Pantego and Surrency soils, depressional; about 200 feet north of a trail road and 600 feet east of a trail road and about 1,500 feet south and 1,500 feet east of

dark gray (10YR 3/1) root stains around root channels; common medium and fine roots; strongly acid; clear wavy boundary.

Btg1—14 to 18 inches; light gray (10YR 7/2) sandy clay loam; few fine and medium prominent brownish yellow (10YR 6/6 and 6/8) mottles; moderate medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.

Btg2—18 to 45 inches; light brownish gray (10YR 6/2) sandy clay loam; many medium prominent brownish yellow (10YR 6/6 and 6/8) mottles; moderate medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.

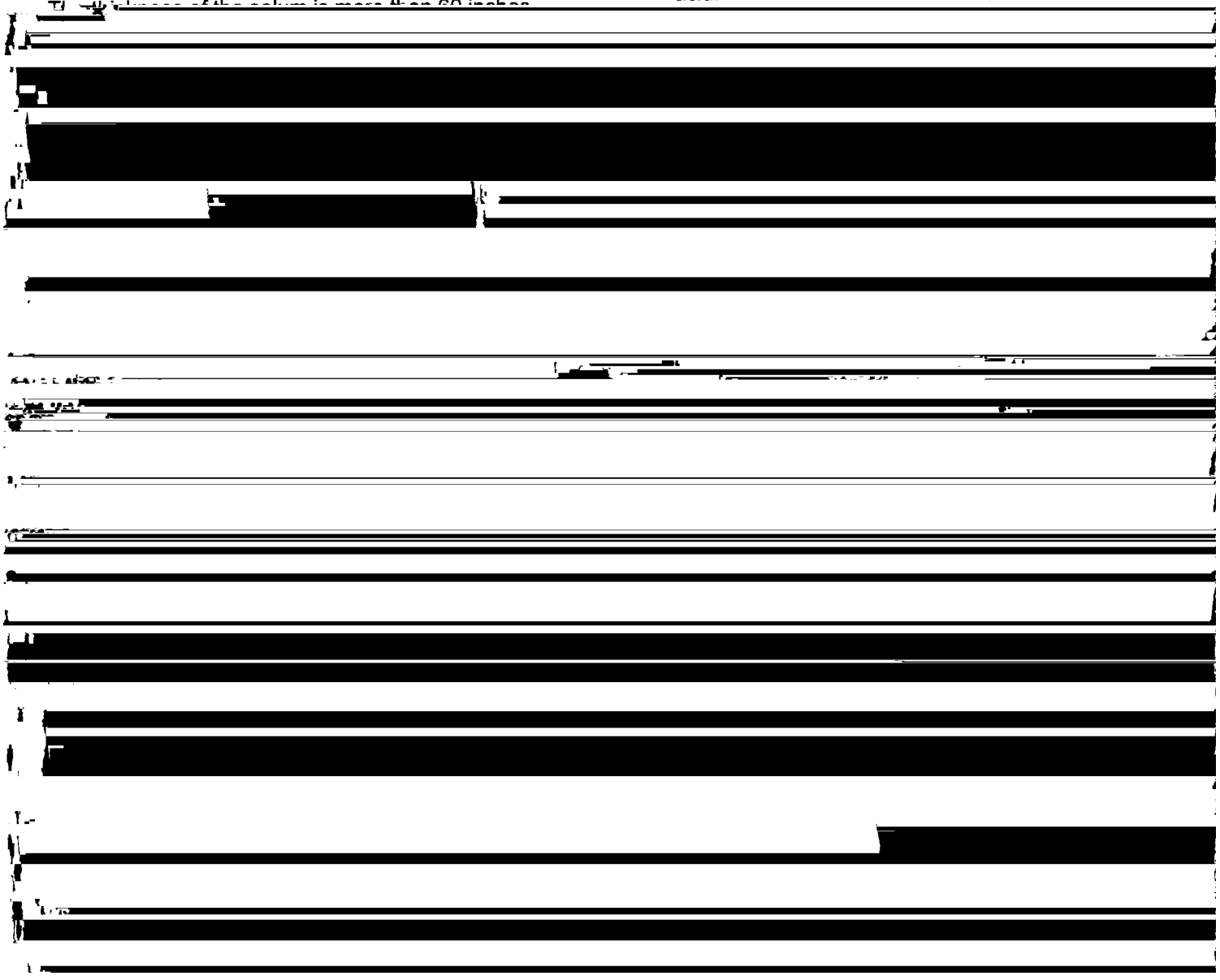
Btg3—45 to 80 inches; grayish brown (10YR 5/2) sandy clay; moderate medium subangular blocky structure; firm; strongly acid.

fine and few medium and coarse roots; uncoated sand grains; moderately acid; clear smooth boundary.

E1—7 to 24 inches; yellowish brown (10YR 5/4) sand; brown (10YR 5/3) streaks and splotches; single grained; loose; moderately acid; gradual wavy boundary.

E2—24 to 55 inches; very pale brown (10YR 7/4) sand; few medium distinct brown (10YR 5/3) splotches and white (10YR 8/2) sand grains; single grained; loose; few fine roots; moderately acid; gradual wavy boundary.

E&Bt—55 to 80 inches; very pale brown (10YR 8/3) fine sand (E); single grained; loose; many clean sand grains; strong brown (7.5YR 5/6) loamy fine sand lamellae (B) that are about 3 to 6 inches long and 1/8 to 1/4 inches thick; well coated sand grains; moderately acid.



Albany, Ridgewood, and Sapelo soils. Albany and Ridgewood soils are somewhat poorly drained and are in higher positions on the landscape than the Plummer soils. Sapelo soils have a spodic horizon.

Typical pedon of Plummer fine sand, about 1,200 feet north and 600 feet west of the southeast corner of sec. 28, T. 5 S., R. 12 E.

Ap—0 to 7 inches; black (10YR 2/1) fine sand; single grained; loose; few fine and very fine roots; very strongly acid; clear wavy boundary.

Eg1—7 to 14 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; very strongly acid; clear wavy boundary.

Eg2—14 to 22 inches; gray (10YR 6/1) fine sand; single grained; loose; very dark grayish brown (10YR 3/2) root stains; few charcoal fragments; strongly acid; gradual wavy boundary.

Eg3—22 to 55 inches; light gray (10YR 7/1) fine sand; common medium distinct yellowish brown (10YR 5/6 and 5/8) mottles; single grained; loose; few medium distinct very dark gray root stains; strongly acid; abrupt wavy boundary.

Btg—55 to 80 inches; gray (10YR 6/1) fine sandy loam; many medium prominent yellowish brown (10YR 5/6 and 5/8) mottles; weak medium subangular blocky

Haven and Surrency soils. Lynn Haven soils have a Bh horizon. Surrency soils are sandy to a depth of more than 20 inches, and they have a loamy subsoil.

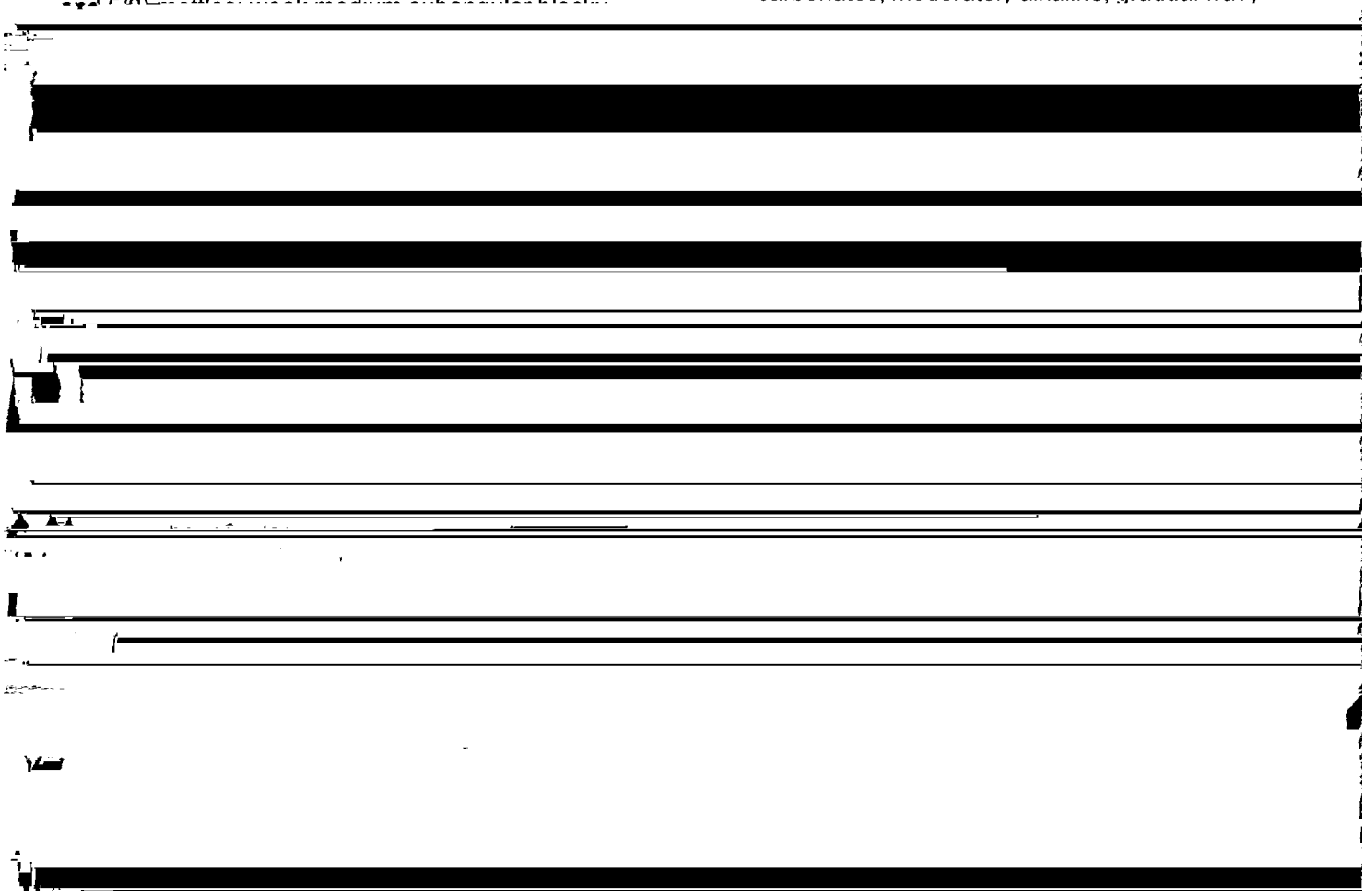
Typical pedon of Rawhide mucky fine sand (fig. 14), in an area of Rawhide and Harbeson soils, depressional; about 600 feet west and 1,200 feet south of the northeast corner of sec. 17, T. 7 S., R. 11 E.

A—0 to 6 inches; black (N 2/0) mucky fine sand; weak medium granular structure; friable; common medium and fine roots; slightly acid; clear smooth boundary.

Bt1—6 to 18 inches; black (10YR 2/1) sandy clay loam; weak fine subangular blocky structure; sticky and slightly plastic; neutral; clear wavy boundary.

Bt2—18 to 26 inches; very dark gray (10YR 3/1) sandy clay loam; common medium distinct gray (10YR 5/1) mottles; weak fine subangular blocky structure; sticky and plastic; many fine and medium roots; neutral; gradual wavy boundary.

Btg1—26 to 40 inches; gray (10YR 5/1) sandy clay loam; common fine prominent strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; sticky and plastic; few fine roots; many fine to coarse and soft to hard white accumulations and nodules of carbonates; moderately alkaline; gradual wavy

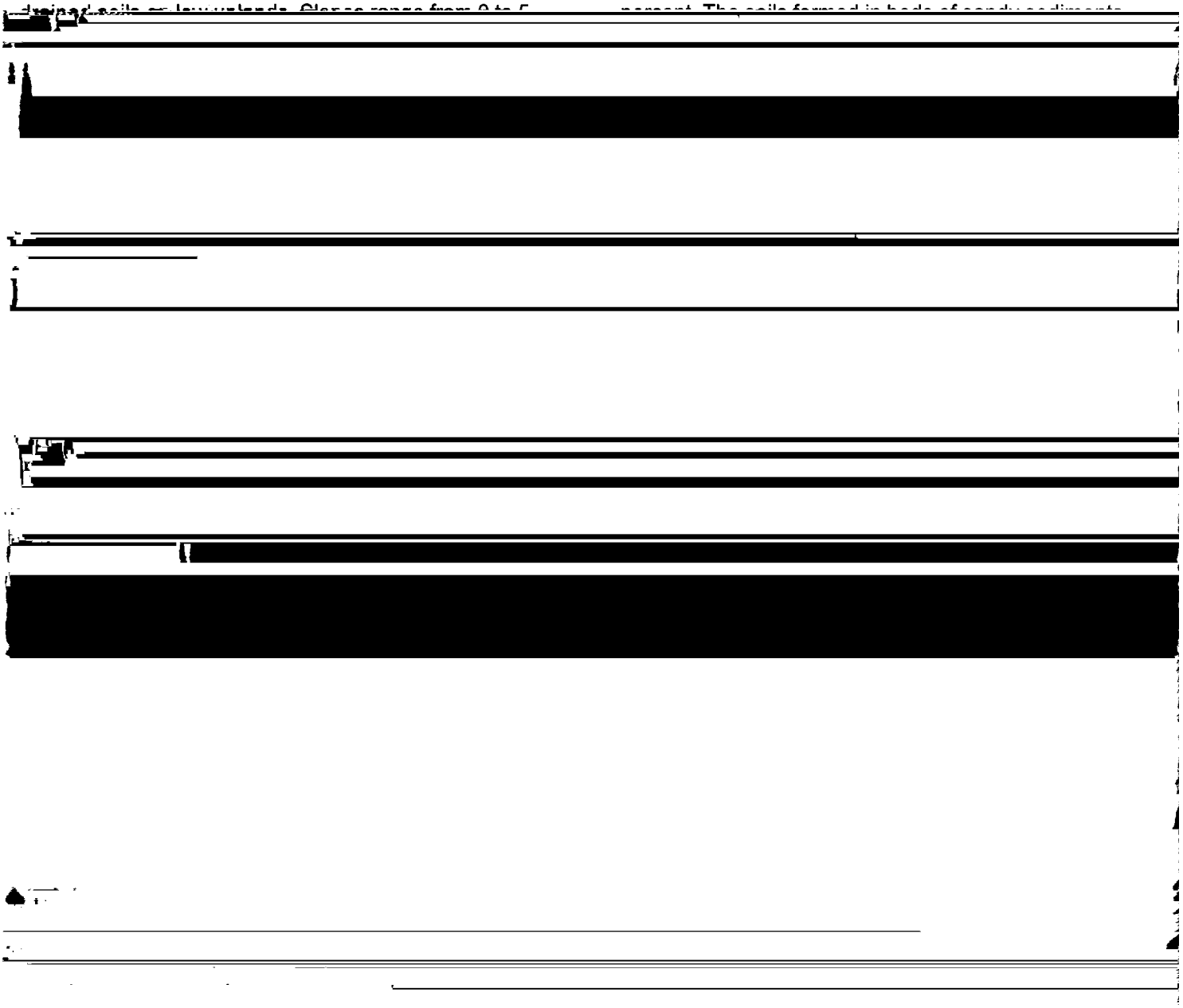


or 6, and chroma of 1. Texture is loamy fine sand, sandy loam, or sandy clay loam.

Some pedons have a C horizon that consists of mixed sand and shell fragments.

Ridgewood Series

The Ridgewood series consists of somewhat poorly



percent. The soils formed in thick beds of sandy marine deposits. These soils are thermic, uncoated Aquic Quartzipsamments.

Ridgewood soils are geographically associated with Albany, Hurricane, and Ortega soils. Albany soils have sandy A and E horizons that are 40 to 79 inches thick. These horizons are underlain by a loamy Bt horizon.

chroma of 2 to 4 or has value of 4 and chroma of 3. It has mottles in shades of red, yellow, brown and gray within a depth of 40 inches.

Sapelo Series

The Sapelo series consists of poorly drained soils in broad areas of the flatwoods. Slopes range from 0 to 2

overlying loamy marine sediments. These soils are sandy, siliceous, thermic Ultic Alaquods.

Sapelo soils are geographically associated with Chaires, Harbeson, Leon, Lynn Haven, Oaky, Tooles, and Wesconnett soils. Chaires soils have a base saturation of more than 35 percent in the argillic horizon. Harbeson, Oaky, and Tooles soils do not have a spodic horizon. Oaky

Btg—60 to 73 inches; light brownish gray (2.5Y 6/2) sandy clay loam; many coarse prominent strong brown (7.5YR 5/6 and 5/8) and common medium prominent red (2.5YR 4/6 and 4/8) mottles; weak medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.

BCg—73 to 80 inches; light olive gray (5Y 6/2) fine sandy loam; common medium distinct yellowish brown (10YR 5/6) mottles; weak fine granular structure; slightly sticky; moderately acid.

The solum is 70 to 80 inches or more thick. Reaction ranges from extremely acid to strongly acid to a depth of about 34 inches and from extremely acid to moderately acid below that depth. The depth to the Bh horizon is 10 to 30 inches, and the depth to the Bt horizon ranges from 40 to 70 inches.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1. It ranges from 3 to 8 inches thick.

The E horizon has hue of 10YR, value of 5 to 8, and chroma of 1 or 2. It ranges from 7 to 22 inches thick.

The Bh horizon has hue of 2.5YR to 10YR, value of 2 to 4, and chroma of 2 to 4. Texture is sand, fine sand, or loamy fine sand. The horizon is 5 to 18 inches thick.

The E' horizon has hue of 10YR to 5Y, value of 5 to 8, and chroma of 1 to 4. Texture is sand or fine sand. The horizon ranges from 20 to 31 inches thick.

The Btg horizon has hue of 10YR to 5Y, value of 5 to 8, and chroma of 1 or 2. In places it has mottles in shades of red, yellow, and brown. Texture is sandy loam, fine sandy loam, or sandy clay loam. Some pedons have lenses and pockets of sand and clay.

Shadeville Series

The Shadeville series consists of moderately well drained soils on low uplands. Slopes range from 0 to 5 percent. The soils formed in sandy and loamy marine deposits overlying fractured limestone bedrock. These soils are loamy, siliceous, thermic Arenic Hapludalfs.

Shadeville soils are geographically associated with Ortega, Otela, Penney, and Ridgewood soils. Otela soils have an argillic horizon at a depth of 40 to 80 inches. Ortega, Penney, and Ridgewood soils are sandy throughout the profile. Penney soils are excessively drained. They are in slightly higher positions on the landscape than the Shadeville soils. Ridgewood soils are somewhat poorly drained, and they are in slightly lower positions on the landscape than the Shadeville soils.

Typical pedon of Shadeville fine sand, in an area of Otela, limestone substratum-Shadeville-Penney complex, 0 to 5 slopes; about 2,500 feet south of the Suwannee River and 500 feet east of a graded road, and about 1,000 feet south and 2,000 feet west of the northeast corner of sec. 34, T. 4 S., R. 11 E.

Ap—0 to 8 inches; dark brown (10YR 3/3) fine sand; weak fine granular structure; very friable; moderately acid; clear wavy boundary.

E1—8 to 18 inches; pale brown (10YR 6/3) fine sand; single grained; loose; few fine roots; few charcoal fragments; slightly acid; gradual wavy boundary.

E2—18 to 28 inches; light yellowish brown (10YR 6/4) fine sand; single grained; loose; slightly acid; abrupt wavy boundary.

Bt1—28 to 38 inches; reddish yellow (7.5YR 6/6) sandy clay loam; weak medium subangular blocky structure; firm; slightly acid; clear wavy boundary.

Bt2—38 to 46 inches; strong brown (7.5YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; slightly acid; gradual wavy boundary.

Bt3—46 to 55 inches; yellowish brown (10YR 5/6) sandy clay loam; many coarse prominent grayish brown (2.5Y 5/2) and common coarse prominent reddish yellow (7.5YR 6/6) mottles; moderate medium subangular blocky structure; firm; moderately acid.

2R—55 inches; fractured limestone bedrock.

The thickness of the solum and the depth to limestone range from 40 to 60 inches. Reaction is very strongly acid to neutral in the A and E horizons and is very strongly acid to moderately alkaline in the Bt horizon.

The A horizon has hue of 10YR, value of 4 to 6, and chroma of 1 to 3. It ranges from 4 to 7 inches thick.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 1 to 4. Texture is sand or fine sand. The horizon ranges from 13 to 31 inches thick.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 6 to 8. Some pedons have mottles in shades of gray, yellow, or brown in the lower part of this horizon. Some pedons have few limestone chips or pebbles directly above the limestone. Texture is sandy loam, fine sandy loam, or sandy clay loam. The Bt horizon ranges from 6 to 30 inches thick.

Surrency Series

Surrency series consists of very poorly drained soils in depressions and on flood plains. Slopes range from 0 to 1 percent. The soils formed in thick beds of sandy and loamy marine or fluvial deposits. These soils are loamy, siliceous, thermic Arenic Umbric Paleaquults.

Surrency soils are geographically associated with Hurricane, Leon, Lynn Haven, Pamlico, and Ridgewood soils. Hurricane, Leon, and Lynn Haven soils have a Bh horizon. Hurricane soils are somewhat poorly drained. Pamlico soils have muck surface layer that is 16 to 38

inches thick. Ridgewood soils do not have a Bh horizon, and they are somewhat poorly drained.

Typical pedon of Surrency mucky fine sand, in an area of Pantego and Surrency soils, depressional; about 700 feet south of a trail road and 1,700 feet east of a trail road, of a graded road and 400 feet east of Florida Highway 51, and about 2,200 feet south and 200 feet east of the northwest corner of sec. 34, T. 7 S., R. 10 E.

A—0 to 6 inches; very dark brown (10YR 2/2) fine sand;

a trail road, and about 1,500 feet south and 1,000 feet east of the northwest corner of sec. 22, T. 6 S., R. 12 E.

Ap—0 to 6 inches; very dark gray (10YR 3/1) fine sand; weak fine granular structure; very friable; moderately acid; clear wavy boundary.

AE—6 to 12 inches; dark grayish brown (10YR 4/2) fine sand; single grained; loose; few fine roots; few charcoal fragments; strongly acid; gradual wavy boundary.

E1—12 to 21 inches; brown (10YR 5/3) fine sand; few fine distinct yellowish brown (10YR 5/6) mottles; single grained; loose; strongly acid; gradual wavy boundary.

E2—21 to 32 inches; light brownish gray (10YR 6/2) sand; common medium prominent dark yellowish brown (10YR 4/6) mottles; single grained; loose; few fine roots; about 5 percent, by volume, ironstone nodules and weathered phosphatic limestone fragments; strongly acid; clear wavy boundary.

Btg1—32 to 55 inches; gray (10YR 6/1) sandy clay loam; many coarse prominent dark yellowish brown (10YR 4/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; about 10 percent, by volume, ironstone nodules and weathered phosphatic limestone fragments; strongly acid; gradual wavy boundary.

Btg2—55 to 80 inches; light gray (10YR 7/2) sandy clay loam; many coarse prominent brownish yellow (10YR 6/6) and common coarse prominent brown (7.5YR 5/4) mottles; moderate medium subangular blocky structure; firm; strongly acid.

The solum ranges from 50 to 80 inches thick. Reaction is very strongly acid to neutral in the A and AE horizons and is very strongly acid to slightly acid in the E, BE, Btg, and Cg horizons.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. The content of coarse fragments, mainly ironstone nodules, quartz gravel, or weathered phosphatic limestone, ranges from 0 to 10 percent, by volume. The horizon ranges from 3 to 7 inches thick.

The AE horizon, if it occurs, has hue of 10YR, value of 4, and chroma of 1 to 4 or has value of 5 and chroma of 3. Texture is sand or fine sand. The content of coarse fragments, mainly ironstone nodules, quartz gravel, or weathered phosphatic limestone, ranges from 0 to 10 percent, by volume. The horizon ranges from 0 to 7 inches thick.

The E horizon has hue of 10YR, value of 4 to 7, and chroma of 1 to 6. Some pedons have mottles in shades of yellow or brown. Texture is sand or fine sand. The content of coarse fragments, mainly ironstone nodules, quartz gravel, or weathered phosphatic limestone, ranges from 2 to 10YR, value of 5 to 8, and chroma of 0 to 4 or is neutral in hue. It has few to common mottles in shades of gray, yellow, or brown. Texture is sandy clay loam or the gravelly analogs of this texture. The content of coarse fragments, mainly ironstone nodules, quartz gravel, or weathered phosphatic limestone, ranges from 2 to 30 percent, by volume.

The lower part of the Btg horizon has hue of 10YR, value of 5 to 8, chroma of 0 to 2 or is neutral in hue. Some pedons have mottles in shades of gray, yellow, red, or brown. Texture is sandy loam or sandy clay loam.

Some pedons have a Cg horizon that has colors similar to those of the lower part of the Btg horizon. Texture ranges from loamy sand to clay.

Wekiva Series

The Wekiva series consists of poorly drained soils on low ridges on the flood plains. Slopes range from 0 to 2 percent. The soils formed in shallow to moderately deep, sandy and loamy marine sediments overlying limestone. These soils are fine-loamy, siliceous, thermic, shallow Aeric Endoaqualfs.

Wekiva soils are geographically associated with Chaires, Meadowbrook, Leon, Rawhide, and Tooles soils. Chaires and Leon soils have a spodic horizon. Leon soils do not have an argillic horizon. Chaires and Leon soils are on similar landforms. Meadowbrook soils have a sandy texture to a depth of more than 40 inches. They have a loamy subsoil. Rawhide soils are very poorly drained. They are very deep over limestone bedrock. Tooles soils have a sandy texture to a depth of more than 20 inches, and they have a loamy subsoil. Tooles soils have limestone bedrock at a depth of 41 to 60 inches.

Typical pedon of Wekiva fine sand, in an area of Wekiva-Rawhide-Tooles complex, occasionally flooded; about 1,500 feet north of a graded road and 200 feet west of a trail road, and about 4,200 feet north and 4,300 feet east of the southwest corner of sec. 34, T. 7 S., R. 10 E.

A—0 to 6 inches; very dark gray (10YR 3/1) fine sand; single grained; loose; few fine and very fine roots; slightly acid; clear wavy boundary.

E—6 to 14 inches; grayish brown (10YR 5/2) fine sand; single grained; loose; common very dark gray (10YR 3/1) streaks; common and few roots; slightly acid; clear wavy boundary.

Bt—14 to 26 inches; brown (10YR 5/3) sandy clay loam; many medium distinct brownish yellow (10YR 6/6 and 6/8) mottles; weak medium granular structure; friable; slightly acid; abrupt irregular boundary.

2R—26 inches; hard limestone rock that has an irregular

The thickness of the solum and the depth to limestone or dolomitic bedrock range from 10 to 30 inches. The combined thickness of the A, E and EB horizons ranges from 7 to 19 inches. Reaction ranges from slightly acid to neutral throughout the solum.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 2 or less. It ranges from 3 to 7 inches thick.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 1 or has value of 6 and chroma of 1 or 2. Texture is fine sand or sand. It ranges from 0 to 12 inches thick.

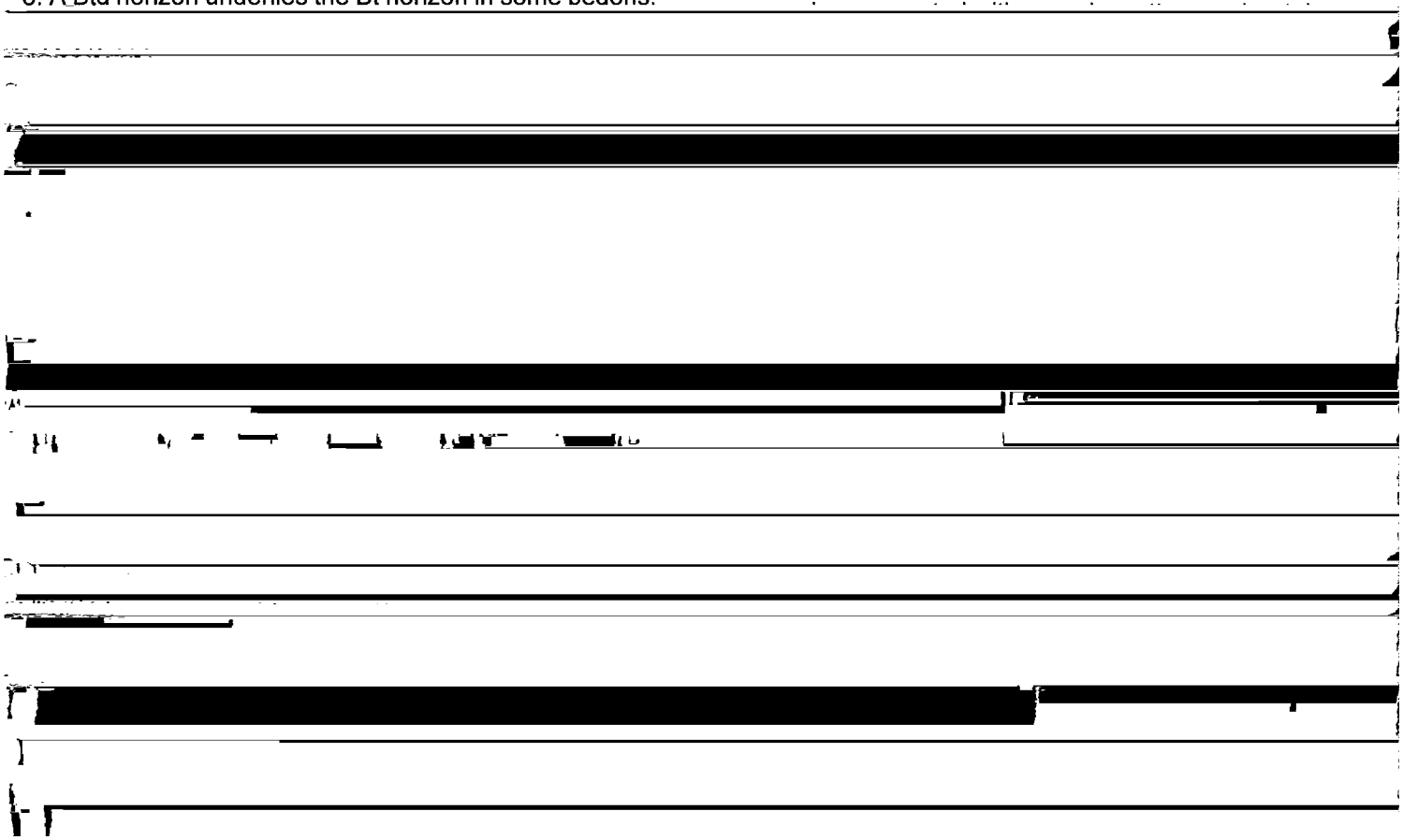
The Bt horizon has hue of 10YR, value of 4, and chroma of 3 or 4 or has value of 5 or 6 and chroma of 3 to 8. A Btg horizon underlies the Bt horizon in some pedons.

about 400 feet north of a trail road and 500 feet east of a trail road, and about 3,000 feet south and 1,000 feet west of the northeast corner of sec. 24, T. 7 S., R. 12 E.

A—0 to 14 inches; black (10YR 2/1) mucky fine sand; moderate fine granular structure; very friable; sand grains coated with organic matter; very strongly acid; gradual wavy boundary.

Bh1—14 to 21 inches; very dark gray (10YR 3/1) fine sand; weak medium subangular blocky structure; friable; sand grains coated with organic matter; very strongly acid; gradual wavy boundary.

Bh2—21 to 28 inches; dark brown (7.5YR 3/2) fine sand; weak fine subangular blocky structure; friable; sand



Formation of the Soils

In this section the factors of soil formation are related to the soils in Lafayette County. In addition, the processes of horizon differentiation are explained.

Factors of Soil Formation

Soils form through weathering and other processes that act

chemical characteristics of the soils. Many differences among soils in the county reflect original differences in the parent material as it was laid down.

Some organic soils are throughout the county. They formed in the partially decayed remains of wetland vegetation.

other burrowing organisms commonly improve soil structure and porosity. The breakdown of plant materials often influences soil reaction. Pine trees reduce alkalinity in many areas in the county.

Microorganisms, such as bacteria and fungi, help to weather and break down minerals and recycle organic matter by breaking it down into more basic components and nutrients. These microorganisms generally are more numerous in the surface layer, and their numbers and types decrease with increasing depth. Earthworms and other burrowing or tunneling organisms mix soil material and influence its chemical composition.

Humans have influenced the formation of soils by altering the vegetative community; by cultivating, draining, irrigating, mixing, removing, covering, and compacting the soil; by discharging wastes and chemicals; and by applying pesticides. Some of the effects of these activities, such as erosion and improved drainage, are readily apparent, whereas others become apparent only after a long time.

Relief

Relief influences soil formation through its effects on drainage, erosion, temperature, and plant and animal life.

Lafayette County has four general topographic areas. These are the scattered large swamps, marshes, and depressions in the northern part of the county; the seasonally wet flatwoods throughout the entire county, except for the southern and southwestern parts; the long, narrow flood plains along the southern, eastern, and western boundaries; and the low, rolling areas along the southern and southwestern boundaries.

The soils in the swamps, marshes, and depressions are covered with water for long periods. The soils in the flatwoods have a water table near the surface during periods of moderate or heavy rainfall. The soils on the flood plains are periodically submerged for brief periods when major drainageways flood. The soils in the low, rolling areas generally do not have a water table near the surface. They generally are extremely dry only during extended periods of low rainfall. These soils are more susceptible to erosion than the soils in the other topographic areas.

Elevations range from more than 165 feet above sea level near Palestine Lake to less than 45 feet near the junction of the Santa Fe River and Olustee Creek. Internal soil drainage generally is not related to elevation. Even in the low, rolling areas, a higher elevation does not necessarily mean better drainage.

Microrelief plays an important part in soil formation. Small rises in depressions and flatwoods and low areas in the uplands commonly support vegetation that differs from that in the surrounding areas. Also, the depth to a seasonal high water table differs.

Time

Most factors that influence soil formation require a long time to change the makeup of soils. Some geologic components are more resistant to breakdown and change than others. In Lafayette County, the dominant geologic material is highly resistant to weathering. The sand, the dominant component in most soils, is almost pure quartz.

Relatively little geologic time has elapsed since the material in which the soils in Lafayette County formed emerged from the seas and was laid down. The loamy and clayey horizons formed in place through the process of clay translocation, were deposited by rivers and streams, or were deposited in beds and layers by the sea.

Processes of Horizon Differentiation

The processes involved in the formation of soils and the development of horizons are the deposition and translocation of organic matter; the translocation of iron and aluminum; the deposition of silts and clays; leaching of calcium carbonates, other bases, and silts; the reduction and transfer of iron and aluminum; and the accumulation of organic matter on the surface.

The deposition and translocation of organic matter in the soil profile can result in the formation of a spodic horizon. This process is caused dominantly by water. Rainfall leaches organic material that has been deposited on the surface into the soil profile.

Iron and aluminum also are leached into the soil profile. They adhere to sand grains, generally in a fluctuating zone of the water table. These materials coat individual sand grains. As development continues, individually coated sand grains begin to adhere to each other. The result is the formation of increasingly hard bodies. As development further continues, the movement of water is restricted, reducing permeability rates within the spodic horizon. In Lafayette County, organic matter generally is the dominant translocated material, resulting in the black or dark brown color in most spodic horizons. Over time, changes in the water table can result in the formation of spodic horizons at varying depths within the soil profile.

The translocation and deposition of silts and clays are caused by water. Rainfall moving through the soil translocates these soil particles downward through the profile. The material is deposited, forming an argillic horizon. Sand grains become coated and bridged. As the argillic horizon continues to form, permeability is eventually so restricted that water can be perched above the horizon.

Leaching of carbonates, bases, and silts has occurred in nearly all of the soils in the county. Rainfall and water movement in the soils cause these elements to be moved downward through the soils and then out of the profile. As

a result, most of the soils in Lafayette County, except for the soils along the major drainageways, are naturally acid.

Gleying, or the chemical reduction of iron, has occurred in the soils. The parts of a soil profile that are saturated for long periods commonly are gleyed with dull gray, yellow, or white colors or with mottles of varying colors. Many of the better drained soils that are not mottled have brighter colors in shades of yellow to red, indicating iron in the oxidized state. These soils are seldom saturated for extended periods.

The accumulation of organic material in or above the mineral surface layer occurs in all of the soils in Lafayette County. The content of organic matter and thickness of the surface layer depend on drainage and vegetation. In droughty soils with sparse vegetation, the content of organic matter generally is low because of rapid oxidation of limited organic deposition. The surface layer of these soils is thin and lighted colored. The wetter soils support more vegetation. The organic matter in these soils is less oxidized, and the amount of available organic material is increased. As a result, the surface layer is thicker and darker. In very wet soils, where water stands above the surface for long periods, oxidation is greatly restricted. As a result, organic matter accumulates above and in the mineral surface layer, forming a very thick, dark mineral surface layer or an organic surface layer (muck). Plowing often mixes the dark surface layer with an underlying horizon, resulting in a thicker dark surface layer in some soils.

The formation of concretions or nodules occurs on a limited basis in Lafayette County. These concretions are iron or phosphatic. They occur in a few soils and generally are moderately deep in the profile. Iron concretions or ironstone can result from the accumulation of translocated iron that adheres to form soft to hard, generally gravel-sized fragments. Phosphatic concretions may be the intermediate result of the weathering of soft limestone-phosphatic bedrock from which most of the carbonates have already been leached. These dominantly gravel-sized concretions are soft to firm.

The soil-forming processes have resulted in a succession of layers, or horizons, in the soil. Variations in the kinds of geologic material, in the soil-forming factors, and in the length of time that the soil-forming processes have been active have resulted in the formation of different soils and their associated properties. Soil formation is an ongoing process, and changes can occur in short or long periods of geologic time, depending on the soil-forming processes.

References

(1) American Association of State Highway and Transportation Officials. 1986. Standard specifications for highway materials and methods of sampling and testing. Ed. 14, 2 vol.

(2) American Society for Testing and Materials. 1993. Standard classification of soils for engineering purposes. ASTM Stand. D 2487.

(3) Applin, P.L. 1951. Preliminary report on buried pre-Mesozoic rocks in Florida and adjacent states. U.S. Geol. Surv. Circ. 91.

(4) Barr, G.L. 1987. Potentiometric surface of the Upper Floridan aquifer in Florida, May 1985. Fla. Geol. Surv. Map Ser. 119.

(5) Bell, O.G. 1924. A preliminary report on clays of Florida. Fla. Geol. Surv. Fifteenth Ann. Rep.

(6) Burnson, T., 1982. Hydrogeologic overview of Suwannee River Water Management District. Suwannee River Water Management District Tech. Rep.

(15) Knapp, M.S., 1978. Environmental Geology Series, Gainesville sheet. Fla. Geol. Surv. Map Ser. 79.

(16) Lloyd, J.M. and K.M. Campbell. 1986. (Unpublished) Geologic map of Lafayette County, *in* Geologic map of Florida, Fla. Geol. Surv. Map Ser. (in preparation).

(17) Miller, J.A. 1986. Hydrogeologic framework of the Floridan aquifer system in Florida and parts of Georgia, Alabama, and South Carolina. U.S. Geol. Surv. Prof. Pap. 1403-B.

(18) Poland, J.F., B.E. Lofgren, and F.S. Riley. 1972. Glossary of selected terms useful in studies of the mechanics of aquifer systems and land subsidence due to fluid withdrawl. U.S. Geol. Surv. Water-Supply Pap. 2025.

(19) Puri, H.S., J.W. Yon, Jr., and W.R. Oglesby. 1967. Geology of Dixie and Gilchrist Counties, Florida. Fla. Geol. Surv. Bull. 49.

(20) Rosenau, J.C., G.L. Faulkner, C.W. Hendry, Jr., and R.W. Hull. 1977. Springs of Florida. Fla. Geol. Surv. Bull. 31.

(21) Schmidt, W., R.W. Hoenstine, M.S. Knapp, E. Lane, G.M. Ogden, and T.M. Scott. 1979. The limestone, dolomite, and coquina resources of Florida. Fla. Bur. of Geol. Rep. of Invest. No. 88.

(22) Scott, T.M., 1988. The lithostratigraphy of the Hawthorn Group (Miocene) of Florida. Fla. Geol. Surv. Bull. 59.

(23) Southeastern Geological Society Ad Hoc Committee on Florida hydrostratigrahic unit definition. 1986. Hydrogeological units of Florida. Fla. Geol. Survey Spec. Public. 28.

(24) Spencer, S.M. 1989. The industrial mineral industry directory of Florida, part 1. Geol. Surv. Infor. Circ. 105.

(25) United States Department of Agriculture. 1975. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. Soil Conserv. Serv., U.S. Dep. Agric. Handb. 436.

(26) United States Department of Agriculture. 1988 (rev.). Procedures for collecting soil samples and methods of analysis for soil survey. Soil Surv. Invest. Rep. 1.

(27) United States Department of Agriculture. 1993. Soil survey manual. U.S. Dep. Agric. Handb. 18.

(28) White, W.A. 1970. The geomorphology of the Florida peninsula. Fla. Bur. of Geol. Bull. 51.

Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon.

[redacted]

make the soil suitable for tillage and to prevent accelerated erosion.

[redacted]

such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils are somewhat similar in all areas.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

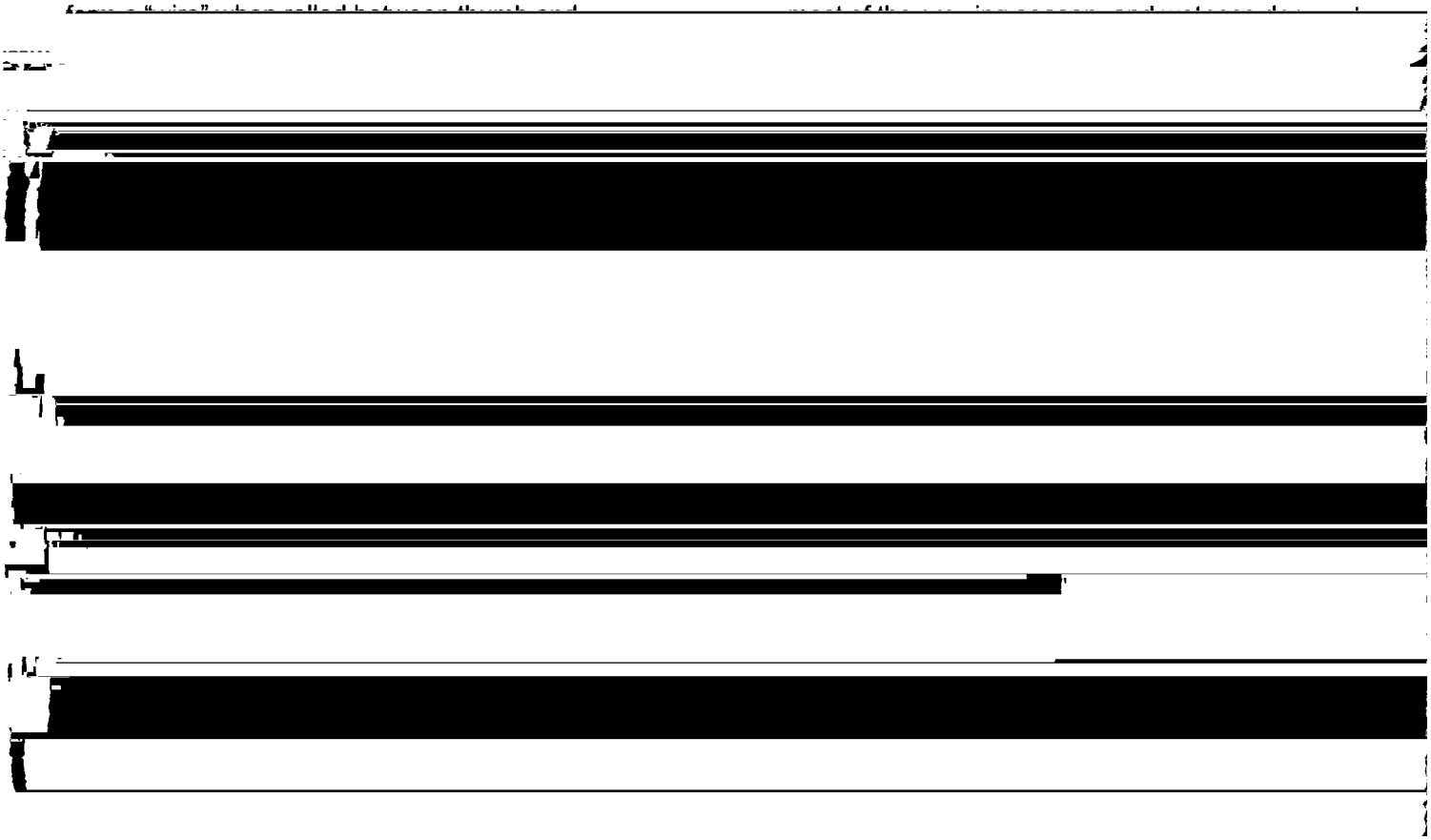
Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:
Loose.—Noncoherent when dry or moist; does not hold together in a mass.
Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.
Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.
Plastic.—When wet, readily deformed by mod erate pressure but can be pressed into a lump; will

plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Depression. An area that is lower in elevation than the surrounding areas and is ponded for several months or more during most years.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:
Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.
Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.
Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout



crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface [illegible] growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

Drainage, surface. Runoff, or surface flow of water, from an area.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

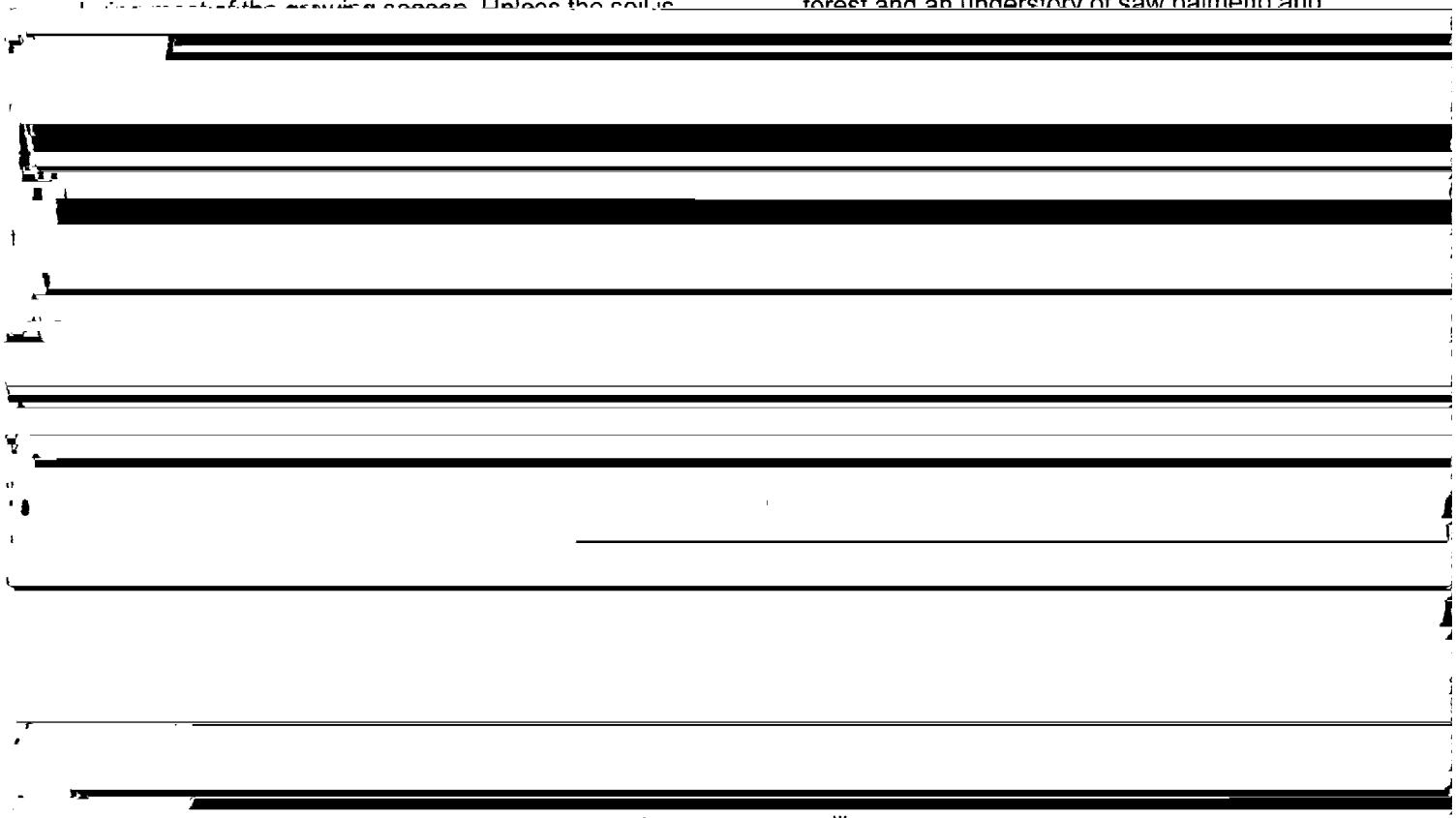
Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic)—Erosion caused by geologic

expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity.*

Fine textured soil. Sandy clay, silty clay, or clay.

Flatwoods. Broad, nearly level areas of poorly drained soils that have a characteristic vegetation of open pine forest and an understory of saw palmetto and



gallberry.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Foot slope. The inclined surface at the base of a hill.

Forb. Any herbaceous plant that is not a grass or a sedge.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

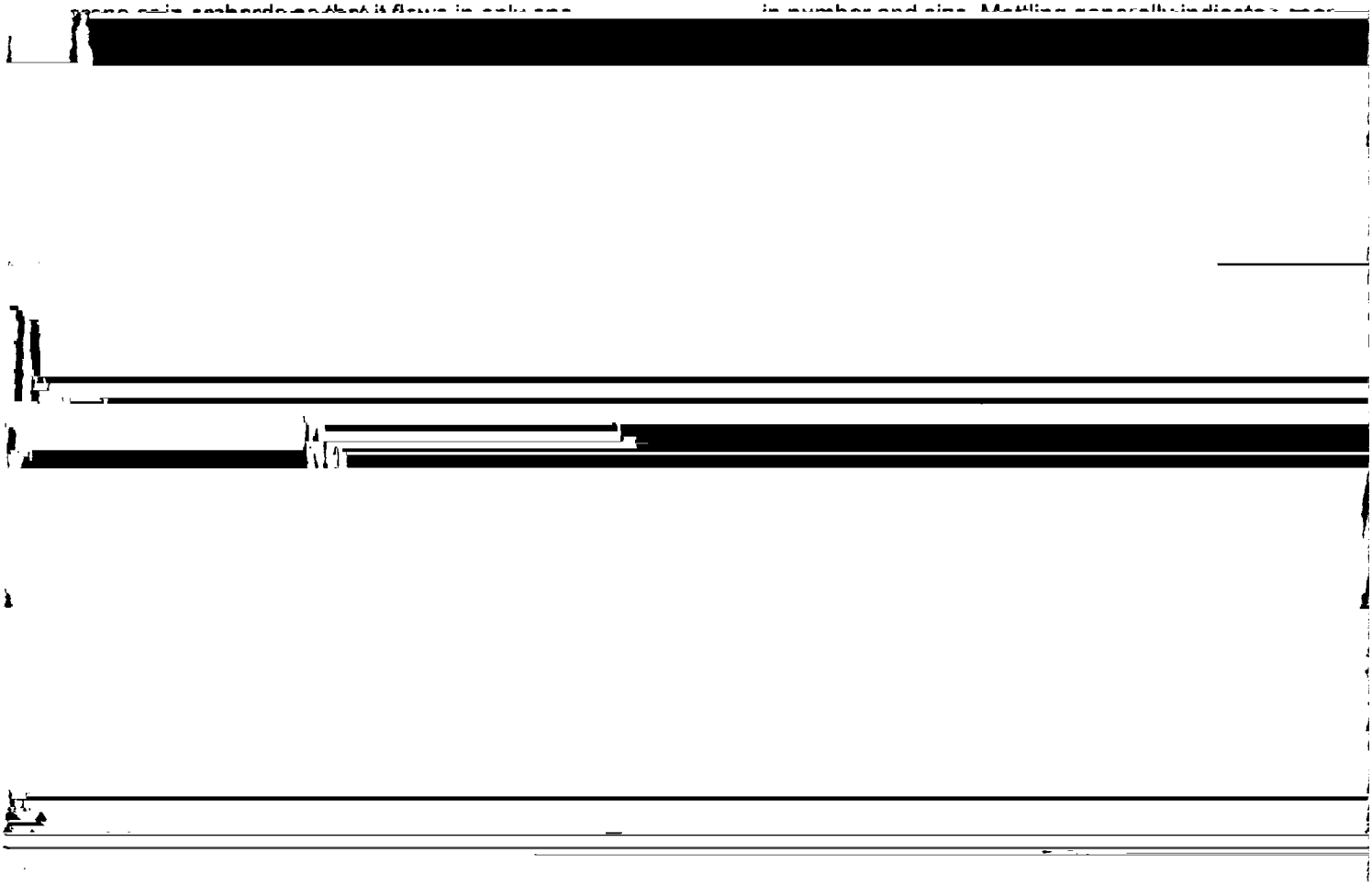
sapric material.

Horizon, soil. A layer of soil, approximately parallel to the

high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing [redacted]



direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

Knoll. A natural mound.

including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary [redacted]

aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Mounding. Filling the area for the septic tank absorption field with suitable soil material to the level above the high water table to meet local and state requirements.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

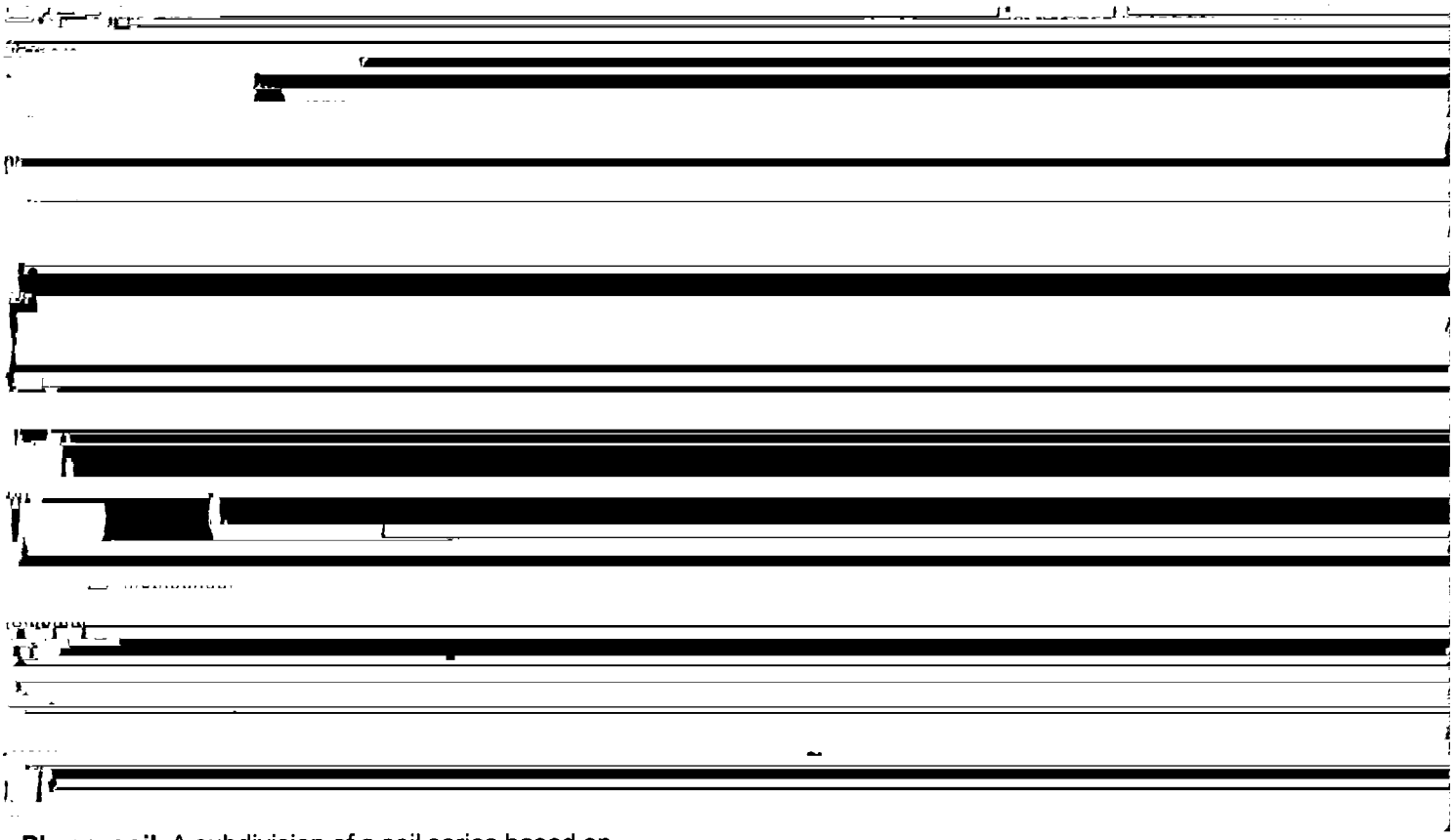
through the saturated soil. Terms describing permeability are:

Very slow	less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches

Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Relief. The elevations or inequalities of a land surface, considered collectively.

Ridge. An area that is higher in elevation than the



Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Subsurface tunnels or pipelike cavities are formed by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the

Rill. A steep-sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand

millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site

in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated),

Toe slope. The outermost inclined surface at the base of a hill; part of a foot slope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, such as zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Weathering. All physical and chemical changes produced by atmospheric agents in rocks or other deposits at or near the earth's surface. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

(Recorded in the period 1957-87 at Perry, Florida)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average daily	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January	65.4	40.8	53.1	81	15	197	4.13	1.98	5.99	7	0.0
February	68.5	42.6	55.6	83	22	212	4.50	2.51	6.26	7	0.1
March	74.8	48.7	61.8	87	27	372	5.12	2.22	7.58	6	0.0
April	81.5	54.5	68.0	92	36	540	3.92	0.94	6.28	4	0.0
May	87.4	61.9	74.7	96	45	766	4.48	1.75	6.76	6	0.0
June	91.1	68.3	79.7	99	57	891	6.53	3.83	8.93	9	0.0
July	92.0	70.8	81.4	99	64	973	8.56	4.72	11.94	12	0.0
August	91.8	70.4	81.1	98	64	964	8.69	4.65	12.24	12	0.0
September	89.7	67.5	78.6	97	52	858	5.81	2.66	8.51	7	0.0
October	83.1	57.2	70.2	93	35	626	2.62	0.46	4.29	4	0.0
November	75.7	48.9	62.3	87	25	379	2.83	1.19	4.21	5	0.0
December	68.6	42.7	55.7	82	17	230	3.57	1.66	5.20	5	0.0
Yearly:											
Average	80.8	56.2	68.5	---	---	---	---	---	---	---	---
Extreme	---	---	---	100	15	---	---	---	---	---	___
Total	---	---	---	---	---	7,008	60.76	50.46	70.62	84	0.1

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1957-87 at Perry, Florida)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Feb. 23	Mar. 14	Mar. 29
2 years in 10 later than--	Feb. 14	Mar. 8	Mar. 24
5 years in 10 later than--	Jan. 29	Feb. 22	Mar. 14
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 21	Nov. 6	Oct. 25
2 years in 10 earlier than--	Nov. 30	Nov. 15	Nov. 2
5 years in 10 earlier than--	Dec. 17	Dec. 3	Nov. 16

TABLE 3.--GROWING SEASON

(Recorded in the period 1957-87 at Perry, Florida)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	290	252	223
8 years in 10	299	263	231
5 years in 10	317	283	247
2 years in 10	357	304	262
1 year in 10	>365	314	271

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
2	Penney sand, 0 to 5 percent slopes	27,320	7.8
4	Blanton-Ortega complex, 0 to 5 percent slopes	8,708	2.5
5	Otela-Penney complex, 0 to 5 percent slopes	36,193	10.3
6	Oaky-Rawhide, depressional, complex	8,590	2.4
7	Chaires-Chaires, depressional, complex	37,244	10.6
9	Sapelo-Chaires, depressional, complex	6,827	2.0
10	Pamlico and Dorovan soils, frequently flooded	447	0.1
11	Pamlico and Dorovan soils, depressional	39,863	11.4
13	Meadowbrook-Chaires complex	2,639	0.8
14	Leon fine sand	38,842	11.1
15	Wesconnett and Lynn Haven soils, depressional	34,311	9.8
16	Tooles fine sand	2,194	0.6
18	Surrency, Plummer, and Clara soils, depressional	5,414	1.5
20	Plummer fine sand	324	0.1
24	Rawhide and Harbeson soils, depressional	11,510	3.3
26	Ridgewood-Hurricane complex, 0 to 5 percent slopes	11,416	3.3
27	Albany-Ridgewood complex, 0 to 5 percent slopes	7,283	2.1
28	Clara and Meadowbrook soils, frequently flooded	14,816	4.2
29	Fluvaquents, frequently flooded	5,750	1.7
31	Chaires, low-Meadowbrook complex	8,705	2.5
32	Chaires and Meadowbrook soils, depressional	2,138	0.6
33	Tooles-Meadowbrook, limestone substratum-Rawhide complex, frequently flooded	2,574	0.7
34	Ortega fine sand, 0 to 5 percent slopes	4,540	1.3
36	Wampee fine sand, 0 to 5 percent slopes	1,550	0.4
37	Pantego and Surrency soils, depressional	1,242	0.4
38	Pantego and Surrency soils, frequently flooded	1,074	0.3
39	Eunola fine sand, 0 to 5 percent slopes	341	0.1
41	Meadowbrook and Harbeson soils, depressional	3,685	1.1
42	Sapelo, low-Clara-Surrency, depressional, complex	3,763	1.1
43	Garcon-Albany-Meadowbrook complex, 0 to 5 percent slopes, occasionally flooded	4,077	1.2
44	Albany-Ousley-Meadowbrook complex, 0 to 5 percent slopes, occasionally flooded	6,266	1.8
45	Wekiva-Rawhide-Tooles complex, occasionally flooded	1,941	0.6
46	Tooles-Rawhide complex, frequently flooded	1,565	0.5
48	Otela, limestone substratum-Shadeville-Penney complex, 0 to 5 percent slopes	1,339	0.4
52	Mandarin fine sand	1,357	0.4
53	Penney sand, 5 to 8 percent slopes	1,278	0.4
54	Garcon-Eunola complex, 2 to 5 percent slopes, occasionally flooded	554	0.2
	Areas of water less than 40 acres in size	138	*
	Areas of water more than 40 acres in size	1,264	0.4
	Total	348,928	100.0

* Less than 0.1 percent.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE

(Yields in the N columns are for nonirrigated soils; those in the I columns are for irrigated soils. Yields are those that can be expected under a high level of managment. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Soil name and map symbol	Corn		Tobacco		Peas, dry	Watermelons		Peanuts		Bahiagrass	Improved bermudagrass hay	
	N	I	N	I	N	N	I	N	I		N	I
	Bu	Bu	Lbs	Lbs	Bu	Tons	Tons	Lbs	Lbs	AUM	Tons	Tons
2---------- Penney	40	80	2,000	3,400	10			2,500		7.0	7.0	10.0
4---------- Blanton-Ortega	50	125	2,000	3,400	10	11	18	2,500		7.2	7.0	10.0
5---------- Otela-Penney	50	125	2,000	3,400	10	11	18	2,500		8.0	7.0	10.0
26---------- Ridgewood-Hurricane	50	125	2,000	3,400	10	10	15	2,500		8.0	7.0	10.0
27---------- Albany-Ridgewood	50	125	2,100	3,400	10	11	18	2,500		7.2	6.0	10.0
34---------- Ortega	50	125	2,100	3,400	10	11	18	2,500		7.2	7.0	10.0
39---------- Eunola	60	150	3,200		12	11	18	2,500		8.5	10.0	12.0
48---------- Otela-Shadeville	50	125	3,200		10	11	18	2,500		8.0	7.0	10.0

RODUCTIVITY

ence of an entry indicates that information was not

Potential productivity			
Common trees	Site index	Productivity class*	Trees to plant
h pine	70	8	Sand pine, slash pine, longleaf pine.
leaf pine	60	4	
pine	75	4	
ey oak	---	---	
jack oak	---	---	
oak	---	---	
oak	---	---	
h pine	90	11	Slash pine, loblolly pine, longleaf pine.
olly pine	85	8	
leaf pine	70	6	
jack oak	---	---	
ey oak	---	---	
hern red oak	---	---	
oak	---	---	
h pine	80	10	Slash pine, loblolly pine, longleaf pine.
leaf pine	70	6	
olly pine	80	8	
jack oak	---	---	
oak	---	---	
ey oak	---	---	
h pine	80	10	Slash pine, longleaf pine, loblolly pine.
leaf pine	80	7	
olly pine	70	6	
oak	---	---	
k cherry	---	---	
hern redcedar	---	---	
ey oak	---	---	
h pine	70	8	Slash pine, longleaf pine, loblolly pine.
leaf pine	60	4	
pine	75	4	
ey oak	---	---	
jack oak	---	---	
oak	---	---	
oak	---	---	

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol	Management concerns					Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
W	Slight	Severe	Severe	Severe	Severe	Slash pine	100	13	Slash pine, loblolly pine.
						Loblolly pine	100	11	
						Longleaf pine	75	6	
						Water oak	---	---	
						Live oak	---	---	
						Sweetgum	---	---	
						Laurel oak	---	---	
						Red maple	---	---	
						Magnolia	---	---	
W	Slight	Severe	Severe	Moderate	Severe	Pondcypress	75	2	***
						Baldcypress	---	---	
						Pond pine	---	---	
						Red maple	---	---	
						Laurel oak	---	---	
						Water oak	---	---	
						Sweetbay	---	---	
[illegible]	Slight	Moderate	Moderate	Slight	Moderate	Slash pine	80	10	Slash pine, loblolly pine.
						Longleaf pine	70	6	
						Loblolly pine	80	8	
						Water oak	---	---	
						Laurel oak	---	---	
						Live oak	---	---	
[illegible]	Slight	Severe	Severe	Moderate	Severe	Pondcypress	75	2	***
						Red maple	---	---	
						Sweetbay	---	---	
						Baldcypress	---	---	
						Blackgum	---	---	
						Pond pine	---	---	
[illegible]	Slight	Moderate	Moderate	Slight	Moderate	Slash pine	80	10	Loblolly pine, slash pine.
						Loblolly pine	77	7	
						Longleaf pine	65	5	
						Water oak	---	---	
						Live oak	---	---	
						Laurel oak	---	---	

[illegible] of table.

LAND MANAGEMENT AND PRODUCTIVITY--Continued

t concerns			Potential productivity			
ling al- y	Wind- throw hazard	Plant competi- tion	Common trees	Site index	Produc- tivity class*	Trees to plant
re	Moderate	Severe	Pondcypress	75	2	***
			Red maple	---	---	
			Sweetbay	---	---	
			Baldcypress	---	---	
			Blackgum	---	---	
			Pond pine	---	---	
re	Severe	Severe	Pond cypress	75	2	***
			Blackgum	---	---	
			Sweetbay	---	---	
			Baldcypress	---	---	
			Carolina ash	---	---	
			Red maple	---	---	
re	Severe	Severe	Pond cypress	75	2	***
			Blackgum	---	---	
			Sweetbay	---	---	
			Baldcypress	---	---	
			Carolina ash	---	---	
			Red maple	---	---	
re	Severe	Severe	Pond cypress	75	2	***
			Blackgum	---	---	
			Sweetbay	---	---	
			Baldcypress	---	---	
			Carolina ash	---	---	
			Red maple	---	---	
re	--------	--------	Pond cypress	75	2	***
			Blackgum	---	---	
			Sweetbay	---	---	
			Baldcypress	---	---	
			Carolina ash	---	---	
			Red maple	---	---	
re	Slight	Severe	Slash pine	88	11	Loblolly pine, slash pine.
			Loblolly pine	91	9	
			Longleaf pine	70	6	
			Live oak	---	---	
			Water oak	---	---	
			Sweetgum	---	---	
			Blackgum	---	---	

y	Productivity class*	Trees to plant
	10	Slash pine, loblolly pine.
	6	
	8	
	---	---
	---	---
	10	Slash pine, longleaf pine.
	6	
	7	
	---	---
	---	---
	2	***
	---	---
	---	---
	---	---
	---	---
	---	---
	---	---
	---	---
	2	***
	---	---
	---	---
	---	---
	---	---
	---	---
	---	---
	---	---
	11	Slash pine, loblolly pine, longleaf pine.
	10	
	---	---
	---	---
	---	---
	---	---
	---	---
	---	---

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

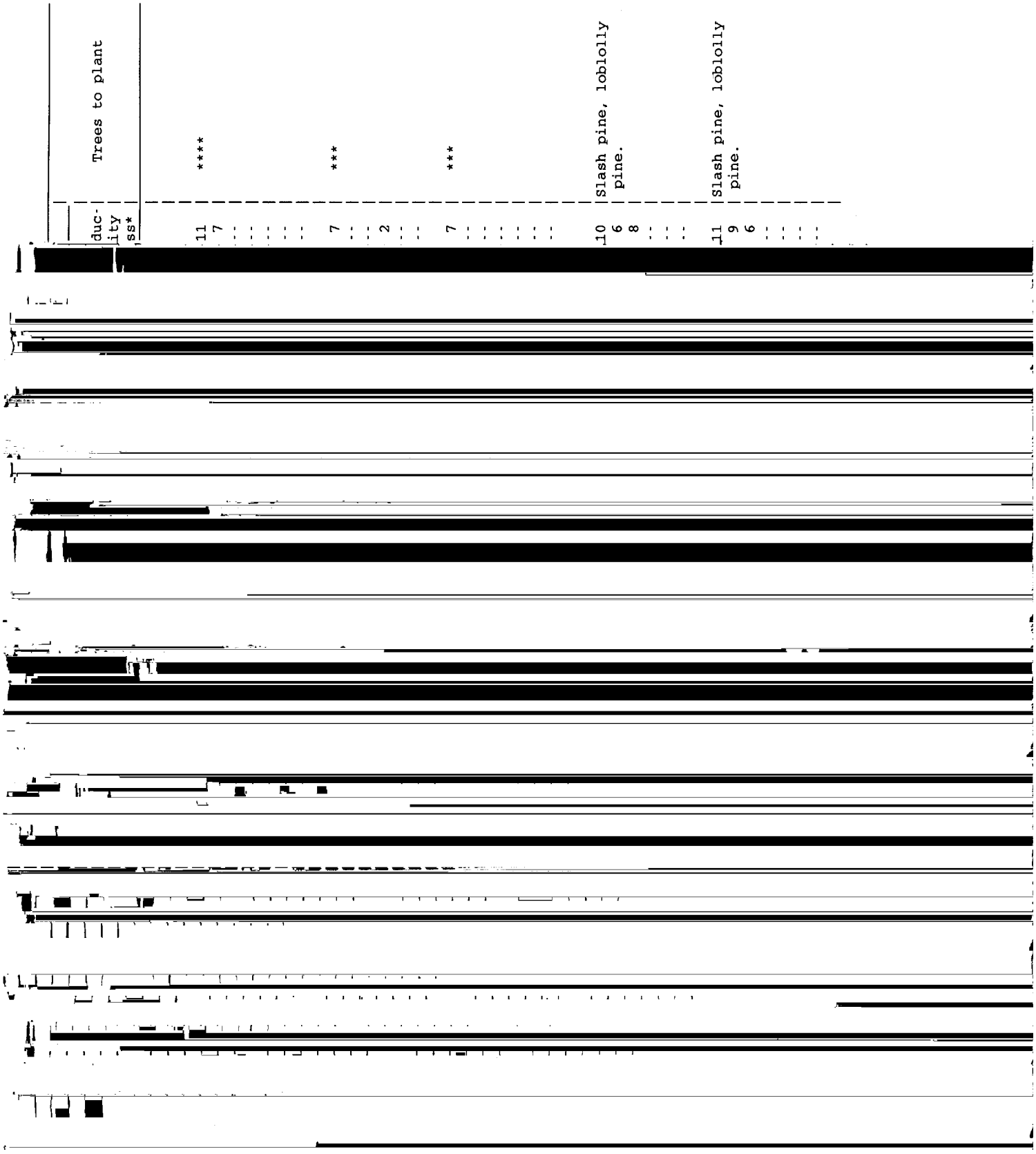
Soil name and map symbol	Ordination symbol	Management concerns					Potential productivity			Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
18**:										
Surrency	2W	Slight	Severe	Severe	Slight	Severe	Pondcypress	75	2	***
							Pond pine	---	---	
							Red maple	---	---	
							Blackgum	---	---	
							Water oak	---	---	
							Baldcypress	---	---	
							Sweetbay	---	---	
Plummer	2W	Slight	Severe	Severe	Slight	Severe	Pondcypress	75	2	***
							Pond pine	---	---	
							Red maple	---	---	
							Blackgum	---	---	
							Water oak	---	---	
							Baldcypress	---	---	
							Sweetbay	---	---	
Clara	2W	Slight	Severe	Severe	Moderate	Severe	Pondcypress	75	2	***
							Pond pine	---	---	
							Red maple	---	---	
							Blackgum	---	---	
							Water oak	---	---	
							Baldcypress	---	---	
							Sweetbay	---	---	
20 Plummer	11W	Slight	Severe	Severe	Slight	Severe	Slash pine	88	11	Loblolly pine, slash pine, longleaf pine.
							Loblolly pine	91	9	
							Longleaf pine	70	6	
							Water oak	---	---	
							Laurel oak	---	---	
							Live oak	---	---	
24**:										
Rawhide	2W	Slight	Severe	Severe	Moderate	Severe	Pondcypress	75	2	***
							Baldcypress	---	---	
							Pond pine	---	---	
							Red maple	---	---	
							Laurel oak	---	---	
							Water oak	---	---	
							Sweetbay	---	---	

See footnote at end of table.

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns					Potential productivity			Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
24**:										
Harbeson	2W	Slight	Severe	Severe	Slight	Severe	Pondcypress	75	2	***
							Baldcypress	---	---	
							Atlantic white-cedar	---	---	
							Blackgum	---	---	
							Sweetgum	---	---	
							Sweetbay	---	---	
26**:										
Ridgewood	10W	Slight	Moderate	Moderate	Slight	Moderate	Slash pine	80	10	Slash pine, longleaf pine.
							Longleaf pine	65	5	
							Laurel oak	---	---	
							Live oak	---	---	
							Water oak	---	---	
							Turkey oak	---	---	
Hurricane	11W	Slight	Moderate	Moderate	Slight	Moderate	Slash pine	85	11	Slash pine, longleaf pine.
							Longleaf pine	75	6	
							Loblolly pine	90	9	
							Blackjack oak	---	---	
							Post oak	---	---	
							Turkey oak	---	---	
27**:										
Albany	11W	Slight	Moderate	Moderate	Slight	Moderate	Slash pine	85	11	Loblolly pine, slash pine, longleaf pine.
							Loblolly pine	95	10	
							Longleaf pine	80	7	
							Live oak	---	---	
							Laurel oak	---	---	
							Post oak	---	---	
							Water oak	---	---	
Ridgewood	10W	Slight	Moderate	Moderate	Slight	Moderate	Slash pine	80	10	Slash pine, longleaf pine.
							Longleaf pine	65	5	
							Laurel oak	---	---	
							Live oak	---	---	
							Water oak	---	---	
							Turkey oak	---	---	

See footnote at end of table.


Trees to plant
duc-
ity
ss*
****
***
***
Slash pine, loblolly
pine.
Slash pine, loblolly
pine.
11
7
7
2
7
10
6
8
11
9
6

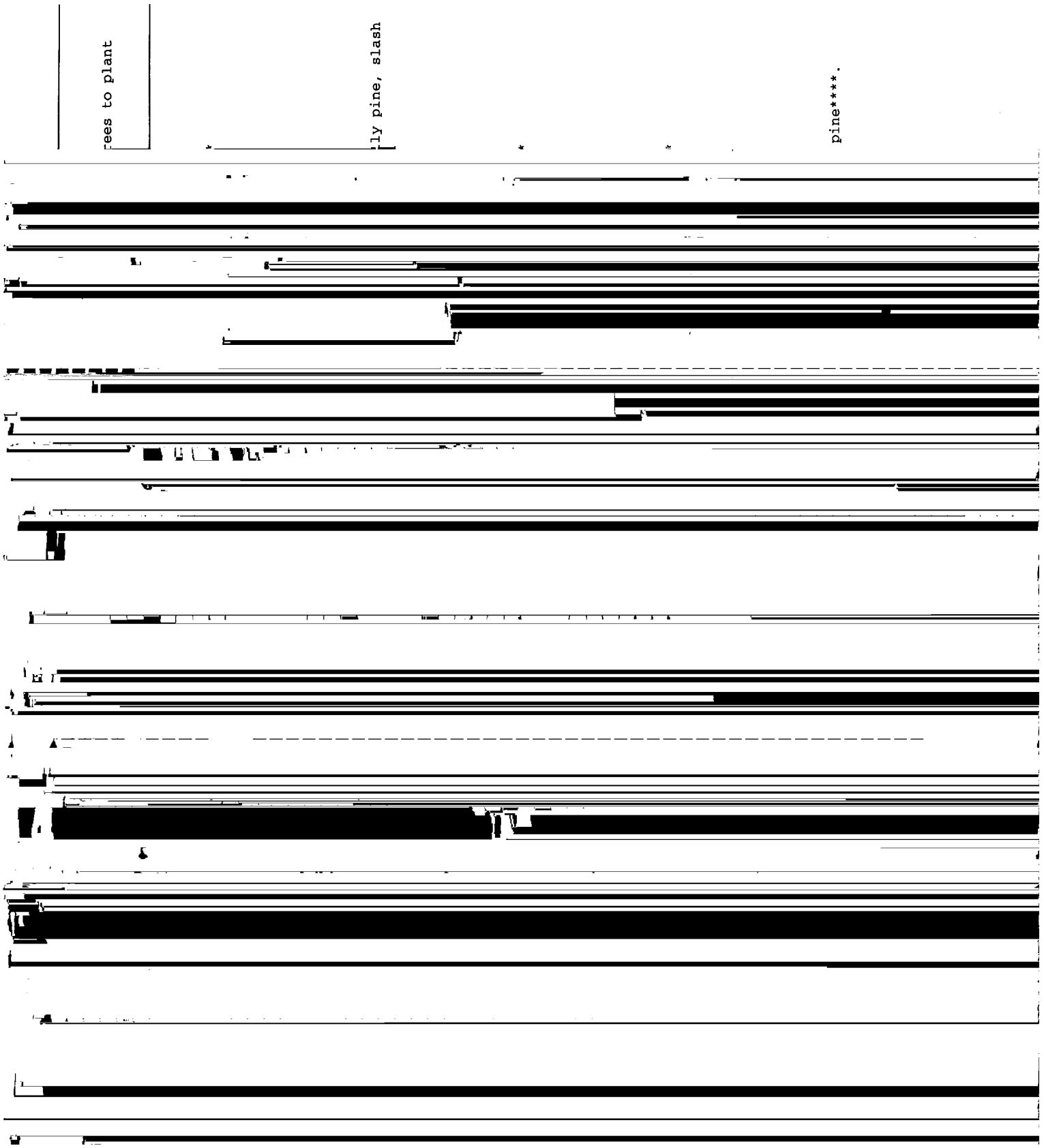
y--Continued

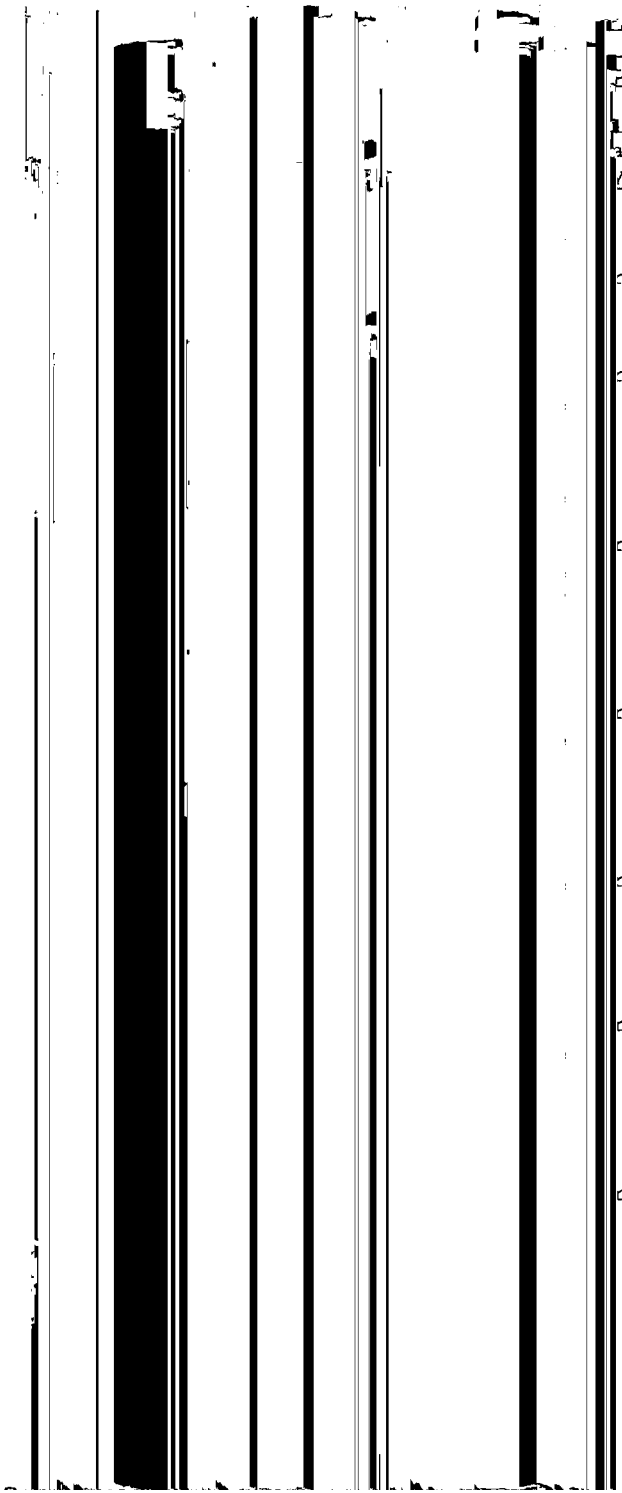
tential productivity			
on trees	Site index	Productivity class*	Trees to plant
ess---------	75	2	***
e----------	---	---	
----------	---	---	
ess---------	---	---	
----------	---	---	
e----------	---	---	
ess---------	75	2	***
e----------	---	---	
----------	---	---	
ess---------	---	---	
----------	---	---	
e----------	---	---	
ne----------	85	11	Slash pine****.
pine-------	80	8	
pine-------	70	6	
k----------	---	---	
----------	---	---	
ak----------	---	---	
----------	---	---	
----------	---	---	
ne----------	85	11	Slash pine****.
pine-------	80	8	
pine-------	70	6	
k----------	---	---	
----------	---	---	
ak----------	---	---	
----------	---	---	
----------	---	---	
ess---------	75	2	***
ess---------	---	---	
e----------	---	---	
e----------	---	---	
ak----------	---	---	
k----------	---	---	
----------	---	---	

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns					Potential productivity			Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
34---------- Ortega	10S	Slight	Moderate	Moderate	Slight	Moderate	Slash pine----------	80	10	Slash pine, loblolly pine, longleaf pine.
							Longleaf pine-------	70	6	
							Loblolly pine-------	80	8	
							Bluejack oak--------	---	---	
							Post oak------------	---	---	
							Turkey oak----------	---	---	
36---------- Wampee	11W	Slight	Moderate	Slight	Moderate	Moderate	Slash pine----------	90	11	Slash pine, loblolly pine.
							Sweetgum------------	---	---	
							Red maple-----------	---	---	
							American holly------	---	---	
							Laurel oak----------	---	---	
37**:										
Pantego----------	2W	Slight	Severe	Severe	Slight	Severe	Pondcypress---------	75	2	***
							Pond pine-----------	---	---	
							Water tupelo--------	---	---	
							Water oak-----------	---	---	
							Red maple-----------	---	---	
							Sweetbay------------	---	---	
							Blackgum------------	---	---	
							Baldcypress---------	---	---	
Surrency----------	2W	Slight	Severe	Severe	Slight	Severe	Pondcypress---------	75	2	***
							Pond pine-----------	---	---	
							Water tupelo--------	---	---	
							Water oak-----------	---	---	
							Red maple-----------	---	---	
							Sweetbay------------	---	---	
							Blackgum------------	---	---	
							Baldcypress---------	---	---	
38**:										
Pantego----------	7W	Slight	Severe	Severe	Severe	Severe	Baldcypress---------	108	7	***
							Sweetgum------------	---	---	
							Pond pine-----------	---	---	
							Water oak-----------	---	---	
							Blackgum------------	---	---	
							Red maple-----------	---	---	
							Pondcypress---------	---	---	
							Loblolly bay--------	---	---	
							Sweetbay------------	---	---	

See footnote at end of table.


rees to plant
ly pine, slash
pine****.



LAND MANAGEMENT AND PRODUCTIVITY--Continued

concerns			Potential productivity			
ling al- /	Wind-throw hazard	Plant competi-tion	Common trees	Site index	Produc-tivity class*	Trees to plant
re	Slight	Severe	Slash pine	88	11	Slash pine****.
			Loblolly pine	91	9	
			Water oak	---	---	
re	Slight	Severe	Pondcypress	75	2	***
			Baldcypress	---	---	
			Pond pine	---	---	
			Red maple	---	---	
			Water oak	---	---	
rate	Slight	Moderate	Slash pine	80	10	Slash pine.
			Longleaf pine	70	6	
			Loblolly pine	80	8	
			Live oak	---	---	
			Laurel oak	---	---	
			Water oak	---	---	
rate	Slight	Moderate	Slash pine	85	11	Loblolly pine, slash pine.
			Loblolly pine	95	10	
			Longleaf pine	80	7	
			Live oak	---	---	
			Water oak	---	---	
			Laurel oak	---	---	
re	Slight	Severe	Baldcypress	108	7	***
			Pond pine	---	---	
			Sweetgum	---	---	
			Pondcypress	75	2	
rate	Slight	Moderate	Slash pine	85	11	Loblolly pine, slash pine, longleaf pine.
			Loblolly pine	95	10	
			Longleaf pine	80	7	
			Live oak	---	---	
			Laurel oak	---	---	
			Water oak	---	---	
rate	Slight	Moderate	Slash pine	80	10	Slash pine, loblolly pine, longleaf pine.
			Loblolly pine	80	8	
			Longleaf pine	70	6	
			Live oak	---	---	
			Laurel oak	---	---	
			Water oak	---	---	

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns					Potential productivity			Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
44**:										
Meadowbrook	7W	Slight	Severe	Severe	Slight	Severe	Baldcypress	108	7	***
							Pondcypress	75	2	
							Sweetgum	---	---	
45**:										
Wekiva	8W	Slight	Severe	Severe	Severe	Severe	Slash pine	65	8	Slash pine, loblolly pine.
							Loblolly pine	65	6	
							Laurel oak	---	---	
							Southern redcedar	---	---	
							Sweetgum	---	---	
							Magnolia	---	---	
Rawhide	2W	Slight	Severe	Severe	Moderate	Severe	Pondcypress	75	2	***
							Baldcypress	---	---	
							Pond pine	---	---	
							Red maple	---	---	
							Laurel oak	---	---	
							Water oak	---	---	
							Sweetbay	---	---	
Tooles	10W	Slight	Severe	Moderate	Moderate	Severe	Slash pine	80	10	Slash pine.
							Loblolly pine	80	8	
							Water oak	---	---	
							Sweetgum	---	---	
46**:										
Tooles	10W	Slight	Severe	Severe	Moderate	Severe	Slash pine	80	10	****
							Loblolly pine	80	8	
							Laurel oak	---	---	
							Sweetgum	---	---	
							Water oak	---	---	
							Southern red cedar	---	---	
							Magnolia	---	---	
Rawhide	2W	Slight	Severe	Severe	Moderate	Severe	Pondcypress	75	2	***
							Baldcypress	---	---	
							Pond pine	---	---	
							Red maple	---	---	
							Sweetbay	---	---	

See footnote at end of table.

Trees to plant
ash pine, longleaf ine.
ash pine, longleaf ine.
ash pine, longleaf ine.
ash pine, longleaf ine.
nd pine, slash pine, ongleaf pine.
ash pine.

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Management concerns					Potential productivity			
Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	Trees to plant
Slight	Moderate	Slight	Slight	Moderate	Slash pine	90	11	Loblolly pine, slash pine.
					Loblolly pine	90	9	
					Sweetgum	90	7	
					Hickory	---	---	
					Live oak	---	---	
					Water oak	---	---	
					Laurel oak	---	---	

is the yield in cubic meters per hectare per year calculated at the age of culmination of mean annual
ed natural stands.
the map unit for composition and behavior characteristics of the map unit.
erally is accomplished by natural regeneration because of severe management restrictions. Planting is
..
drainage or bedding is necessary to regenerate the forest stand by planting trees and to obtain
y of the stand.

TABLE 7.--RECREATIONAL DEVELOPMENT

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
2---------- Penney	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
4*: Blanton----------	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
Ortega----------	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
5*: Otela----------	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
Penney----------	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
6*: Oaky----------	Severe:	Severe:	Severe:	Severe:	Severe:

TABLE 7.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
11*:					
Pamlico	Severe: flooding, ponding, excess humus.	Severe: ponding, excess humus.	Severe: ponding, excess humus.	Severe: ponding, excess humus.	Severe: ponding, excess humus.
Dorovan	Severe: ponding, excess humus.	Severe: ponding, excess humus.	Severe: excess humus, ponding.	Severe: ponding, excess humus.	Severe: ponding, excess humus.
13*:					
Meadowbrook	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.
Chaires	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness.
14 Leon	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness.
15*:					
Wesconnett	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.
Lynn Haven	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.
16 Tooles	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness.
18*:					
Surrency	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.
Plummer	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding, droughty.
Clara	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.
20 Plummer	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.
24*:					
Rawhide	Severe: ponding, percs slowly.	Severe: ponding, too sandy, percs slowly.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.

See footnote at end of table.

TABLE 7.--RECREATIONAL DEVELOPMENT--Continued

[redacted]

map symbol					
24*:					
Harbeson	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.
26*:					
Ridgewood	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
Hurricane	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
27*:					
Albany	Severe: wetness, too sandy.	Severe: too sandy.	Severe: too sandy, wetness.	Severe: too sandy.	Severe: droughty.
Ridgewood	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
28*:					
Clara	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness, flooding.	Severe: wetness, too sandy.	Severe: wetness, flooding.
Meadowbrook	Severe: flooding, ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding, flooding.	Severe: ponding, too sandy.	Severe: flooding, ponding.
29 Fluvaquents	Severe: flooding, wetness, percs slowly.	Severe: wetness, percs slowly.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
31*:					

TABLE 7.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
33*:					
Meadowbrook	Severe: flooding, wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness, flooding.	Severe: wetness, too sandy.	Severe: wetness, flooding.
Rawhide	Severe: flooding, ponding, percs slowly.	Severe: ponding, too sandy, percs slowly.	Severe: too sandy, ponding, flooding.	Severe: ponding, too sandy.	Severe: ponding, flooding.
34 Ortega	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
36 Wampee	Severe: wetness,	Severe: too sandy.	Severe: too sandy,	Severe: too sandy.	Severe: droughty.

TABLE 7.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
42*:					
Surrency	Severe: ponding, too sandy.	Severe: ponding, too sandy.	Severe: too sandy, ponding.	Severe: ponding, too sandy.	Severe: ponding.
43*:					
Garcon	Severe: flooding, too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: wetness, droughty, flooding.
Albany	Severe:	Severe:	Severe:	Severe:	Severe:

TABLE 7.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
46*:					
Rawhide	Severe: flooding, ponding, percs slowly.	Severe: ponding, too sandy, percs slowly.	Severe: too sandy, ponding, flooding.	Severe: ponding, too sandy.	Severe: ponding, flooding.
48*:					
Otela	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
Shadeville	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
Penney	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
52 Mandarin	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: wetness, droughty.
53 Penney	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
54*:					
Garcon	Severe: flooding, too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: wetness, droughty, flooding.
Eunola	Severe: flooding, too sandy.	Severe: too sandy.	Moderate: slope, wetness, flooding.	Severe: too sandy.	Moderate: wetness, flooding.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 8.--WILDLIFE HABITAT

(See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
2---------- Penney	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
4*:										
Blanton----------	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Ortega----------	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
5*:										
Otela----------	Poor	Fair	Good	Fair	Fair	Poor	Poor	Fair	Fair	Very poor.
Penney----------	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
6*:										
Oaky----------	Poor	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair.
Rawhide----------	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Good	Good	Very poor.	Poor	Good.
7*:										
Chaires----------	Poor	Fair	Fair	Poor	Fair	Poor	Fair	Fair	Fair	Poor.
Chaires----------	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Good	Very poor.	Very poor.	Good.
9*:										
Sapelo----------	Poor	Fair	Fair	Poor	Fair	Fair	Fair	Fair	Fair	Fair.
Chaires----------	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Good	Very poor.	Very poor.	Good.
10*:										
Pamlico----------	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Dorovan----------	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
11*:										
Pamlico----------	Very poor.	Very poor.	Poor	Poor	Poor	Good	Good	Very poor.	Poor	Good.
Dorovan----------	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
13*:										
Meadowbrook-------	Poor	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair.
Chaires----------	Poor	Fair	Fair	Poor	Fair	Poor	Fair	Fair	Fair	Poor.
14---------- Leon	Poor	Fair	Fair	Poor	Fair	Poor	Fair	Fair	Fair	Poor.

See footnote at end of table.

TABLE 8.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
15*:										
Wesconnett	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Good	Very poor.	Very poor.	Good.
Lynn Haven	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Good	Very poor.	Very poor.	Good.
16 Tooles	Poor	Fair	Fair	Fair	Fair	Fair	Good	Poor	Fair	Fair.
18*:										
Surrency	Poor	Poor	Poor	Poor	Poor	Fair	Good	Poor	Poor	Fair.
Plummer	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Clara	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Fair	Very poor.	Very poor.	Fair.
20 Plummer	Poor	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair.
24*:										
Rawhide	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Good	Good	Very poor.	Poor	Good.
Harbeson	Very poor.	Very poor.	Poor	Poor	Poor	Fair	Fair	Poor	Poor	Fair.
26*:										
Ridgewood	Poor	Poor	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Poor.
Hurricane	Poor	Poor	Fair	Fair	Fair	Poor	Very poor.	Poor	Fair	Very poor.
27*:										
Albany	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Poor.
Ridgewood	Poor	Poor	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Poor.
28*:										
Clara	Very poor.	Very poor.	Poor	Fair	Poor	Fair	Fair	Very poor.	Poor	Fair.
Meadowbrook	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Good	Very poor.	Very poor.	Good.
29 Fluvaquents	Poor	Poor	Fair	Fair	Poor	Fair	Fair	Poor	Fair	Fair.
31*:										
Chaires	Poor	Fair	Fair	Poor	Fair	Poor	Fair	Fair	Fair	Poor.
Meadowbrook.										
32*:										
Chaires	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Good	Very poor.	Very poor.	Good.

See footnote at end of table.

TABLE 8.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
32*:										
Meadowbrook	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Good	Very poor.	Very poor.	Good.
33*:										
Tooles	Very poor.	Poor	Poor	Poor	Poor	Fair	Good	Very poor.	Poor	Fair.
Meadowbrook	Poor	Fair	Fair	Fair	Fair	Fair	Good	Poor	Fair	Fair.
Rawhide	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Good	Good	Very poor.	Poor	Good.
34--Ortega	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
36--Wampee	Fair	Fair	Good	Good	Good	Fair	Poor	Fair	Good	Fair.
37*:										
Pantego	Very poor.	Very poor.	Very poor.	Fair	Poor	Good	Good	Very poor.	Poor	Good.
Surrency	Poor	Poor	Poor	Poor	Poor	Fair	Good	Poor	Poor	Fair.
38*:										
Pantego.										
Surrency	Poor	Poor	Poor	Poor	Poor	Fair	Good	Poor	Poor	Fair.
39--Eunola	Fair	Fair	Good	Fair	Good	Fair	Fair	Fair	Good	Fair.
41*:										
Meadowbrook	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Good	Very poor.	Very poor.	Good.
Harbeson	Very poor.	Very poor.	Poor	Poor	Poor	Fair	Fair	Poor	Poor	Fair.
42*:										
Sapelo	Poor	Fair	Fair	Poor	Fair	Fair	Fair	Fair	Fair	Fair.
Clara	Poor	Poor	Fair	Poor	Fair	Fair	Fair	Poor	Poor	Fair.
Surrency	Poor	Poor	Poor	Poor	Poor	Fair	Good	Poor	Poor	Fair.
43*:										
Garcon	Poor	Fair	Good	Poor	Fair	Poor	Poor	Fair	Fair	Poor.
Albany	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Poor.
Meadowbrook	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Good	Very poor.	Very poor.	Good.
44*:										
Albany	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Poor.
Ousley	Poor	Fair	Good	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.

See footnote at end of table.

TABLE 8.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
44*:										
Meadowbrook	Very poor.	Very poor.	Very poor.	Very poor.	Fair	Good	Very poor.	Very poor.	Very poor.	Good.
45*:										
Wekiva	Poor	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Fair	Fair.
Rawhide	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Good	Good	Very poor.	Poor	Good.
Tooles	Poor	Poor	Fair	Fair	Fair	Fair	Good	Poor	Fair	Fair.
46*:										
Tooles	Very poor.	Poor	Poor	Poor	Poor	Fair	Good	Very poor.	Poor	Fair.
Rawhide	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Good	Good	Very poor.	Poor	Good.
48*:										
Otela	Poor	Fair	Good	Fair	Fair	Poor	Poor	Fair	Fair	Very poor.
Shadeville	Fair	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.

TABLE 9.--BUILDING SITE DEVELOPMENT

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
2---------- Penney	Severe: cutbanks cave.	Slight----------	Slight----------	Slight----------	Slight----------	Severe: droughty.
4*: Blanton----------	Severe: cutbanks cave.	Slight----------	Moderate: wetness.	Slight----------	Slight----------	Severe: droughty.
Ortega----------	Severe: cutbanks cave.	Slight----------	Moderate: wetness.	Slight----------	Slight----------	Severe: droughty.
5*: Otela----------	Severe: cutbanks cave.	Slight----------	Moderate: wetness.	Slight----------	Slight----------	Moderate: droughty.
Penney----------	Severe: cutbanks cave.	Slight----------	Slight----------	Slight----------	Slight----------	Severe: droughty.
6*: Oaky----------	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Rawhide----------	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
7*: Chaires----------	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Chaires----------	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
9*: Sapelo----------	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
Chaires----------	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
10*: Pamlico----------	Severe: cutbanks cave, excess humus, ponding.	Severe: flooding, ponding, low strength.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: low strength, flooding, ponding.	Severe: ponding, flooding, excess humus.
Dorovan----------	Severe: excess humus, ponding.	Severe: subsides, flooding, ponding.	Severe: subsides, flooding, ponding.	Severe: subsides, flooding, ponding.	Severe: subsides, ponding, flooding.	Severe: ponding, flooding, excess humus.

See footnote at end of table.

TABLE 9.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
11*:						
Pamlico	Severe: cutbanks cave, excess humus, ponding.	Severe: flooding, ponding, low strength.	Severe: flooding, ponding.	Severe: flooding, ponding, low strength.	Severe: low strength, ponding.	Severe: ponding, excess humus.
Dorovan	Severe: excess humus, ponding.	Severe: subsides, ponding.	Severe: subsides, ponding.	Severe: subsides, ponding.	Severe: subsides, ponding.	Severe: ponding, excess humus.
13*:						
Meadowbrook	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
Chaires	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
14 Leon	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
15*:						
Wesconnett	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Lynn Haven	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
16 Tooles	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
18*:						
Surrency	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Plummer	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding, droughty.
Clara	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
20 Plummer	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
24*:						
Rawhide	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Harbeson	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.

See footnote at end of table.

TABLE 9.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
26*:						
Ridgewood	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: droughty.
Hurricane	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: droughty.
27*:						
Albany	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Severe: droughty.
Ridgewood	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Severe: droughty.
28*:						
Clara	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.
Meadowbrook	Severe: cutbanks cave, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.
29	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:
	wetness.	wetness.	wetness.	wetness.	flooding.	flooding.
31*:						
Chaires	Severe:	Severe:	Severe:	Severe:	Severe:	Severe:

TABLE 9.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
34--- Ortega	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Severe: droughty.
36--- Wampee	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Severe: droughty.
37*:						
Pantego	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Surrency	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
38*:						
Pantego	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.
Surrency	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.
39--- Eunola	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty, too sandy.
41*:						
Meadowbrook	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Harbeson	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
42*:						
Sapelo	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
Clara	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Surrency	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
43*:						
Garcon	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Moderate: wetness, droughty, flooding.
Albany	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Severe: droughty.

See footnote at end of table.

TABLE 9.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
43*:						
Meadowbrook	Severe: cutbanks cave, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: ponding, flooding.	Severe: ponding, droughty.
44*:						
Albany	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Severe: droughty.
Ousley	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Severe: droughty.
Meadowbrook	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, droughty.
45*:						
Wekiva	Severe: depth to rock, wetness.	Severe: flooding, wetness, depth to rock.	Severe: flooding, wetness, depth to rock.	Severe: flooding, wetness, depth to rock.	Severe: depth to rock, wetness, flooding.	Severe: wetness, depth to rock.
Rawhide	Severe: ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: ponding, flooding.	Severe: ponding.
Tooles	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness.
46*:						
Tooles	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Rawhide	Severe: ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: ponding, flooding.	Severe: ponding, flooding.
48*:						
Otela	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty.
Shadeville	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty.
Penney	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Severe: droughty.
52 Mandarin	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
53 Penney	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight	Severe: droughty.

See footnote at end of table.

TABLE 9.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
54*:						
Garcon	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Moderate: wetness, droughty, flooding.
Eunola	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Moderate: wetness, flooding.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 10.--SANITARY FACILITIES

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
2 Penney	Slight	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
4*: Blanton	Moderate: wetness.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
Ortega	Moderate: wetness.	Severe: seepage.	Severe: seepage, wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
5*: Otela	Severe: percs slowly, poor filter.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Penney	Slight	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
6*: Oaky	Severe: wetness, percs slowly.	Severe: seepage.	Severe: seepage, wetness.	Severe: wetness.	Poor: wetness.
Rawhide	Severe: ponding, percs slowly.	Severe: ponding.	Severe: seepage, ponding.	Severe: ponding.	Poor: ponding.
7*: Chaires	Severe: wetness, percs slowly, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
Chaires	Severe: ponding, percs slowly, poor filter.	Severe: seepage, ponding.	Severe: ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
9*: Sapelo	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
Chaires	Severe: ponding, percs slowly, poor filter.	Severe: seepage, ponding.	Severe: ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.

See footnote at end of table.

TABLE 10.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
10*:					
Pamlico	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, excess humus.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: seepage, excess humus, ponding.
Dorovan	Severe: subsides, flooding, ponding.	Severe: flooding, excess humus, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, ponding.	Poor: ponding, excess humus.
11*:					
Pamlico	Severe: ponding, poor filter.	Severe: seepage, flooding, excess humus.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
Dorovan	Severe: subsides, ponding.	Severe: excess humus, ponding.	Severe: seepage, ponding.	Severe: ponding.	Poor: ponding, excess humus.
13*:					
Meadowbrook	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
Chaires	Severe: wetness, percs slowly, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
14 Leon	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
15*:					
Wesconnett	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
Lynn Haven	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
16 Tooles	Severe: wetness,	Severe: seepage.	Severe: depth to rock	Severe: seepage	Poor:

TABLE 10.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
18*:					
Plummer	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
Clara	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
20 Plummer	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: too sandy, wetness.
24*:					
Rawhide	Severe: ponding, percs slowly.	Severe: ponding.	Severe: seepage, ponding.	Severe: ponding.	Poor: ponding.
Harbeson	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
26*:					
Ridgewood	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
Hurricane	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
27*:					
Albany	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: too sandy, wetness.
Ridgewood	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy.
28*:					
Clara	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
Meadowbrook	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, ponding.	Severe: flooding, ponding, too sandy.	Severe: flooding, seepage, ponding.	Poor: seepage, too sandy, ponding.
29 Fluvaquents	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.

See footnote at end of table.

TABLE 10.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
31*:					
Chaires	Severe: wetness, percs slowly, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
Meadowbrook	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
32*:					
Chaires	Severe: ponding, percs slowly, poor filter.	Severe: seepage, ponding.	Severe: ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
Meadowbrook	Severe: ponding, percs slowly.	Severe: seepage, ponding.	Severe: ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
33*:					
Tooles	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding, wetness.	Severe: flooding, depth to rock, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
Meadowbrook	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, depth to rock, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
Rawhide	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, ponding.	Poor: ponding.
34--- Ortega	Moderate: wetness.	Severe: seepage.	Severe: seepage, wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
36--- Wampee	Severe: wetness, percs slowly, poor filter.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Poor: wetness.
37*:					
Pantego	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Poor: ponding.

TABLE 10.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
38*:					
Surrency	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, wetness, too sandy.	Severe: flooding, seepage, wetness.	Poor: too sandy, wetness.
39 Eunola	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Fair: wetness.
41*:					
Meadowbrook	Severe: ponding, percs slowly.	Severe: seepage, ponding.	Severe: ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
Harbeson	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: ponding, too sandy.	Severe: seepage, ponding.	Poor: seepage, too sandy, ponding.
42*:					
Sapelo	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
Clara	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
Surrency	Severe: ponding.	Severe: seepage, ponding.	Severe: ponding, too sandy.	Severe: seepage, ponding.	Poor: too sandy, ponding.
43*:					
Garcon	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: thin layer.
Albany	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, wetness, too sandy.	Severe: flooding, seepage, wetness.	Poor: too sandy, wetness.
Meadowbrook	Severe: flooding, ponding, percs slowly.	Severe: seepage, flooding, ponding.	Severe: flooding, ponding, too sandy.	Severe: flooding, seepage, ponding.	Poor: seepage, too sandy, ponding.
44*:					
Albany	Severe:	Severe:	Severe:	Severe:	Poor:

TABLE 10.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
44*:					
Ousley	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy.
Meadowbrook	Severe: flooding, ponding, percs slowly.	Severe: seepage, flooding, ponding.	Severe: flooding, ponding, too sandy.	Severe: flooding, seepage, ponding.	Poor: seepage, too sandy, ponding.
45*:					
Wekiva	Severe: flooding, depth to rock, wetness.	Severe: depth to rock, flooding, wetness.	Severe: flooding, depth to rock, wetness.	Severe: flooding, depth to rock, wetness.	Poor: depth to rock, wetness.
Rawhide	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, ponding.	Poor: ponding.
Tooles	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding, wetness.	Severe: flooding, depth to rock, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
46*:					
Tooles	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding, wetness.	Severe: flooding, depth to rock, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
Rawhide	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, ponding.	Poor: ponding.
48*:					
Otela	Moderate: depth to rock, wetness, percs slowly.	Severe: seepage.	Severe: depth to rock, wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Shadeville	Moderate: wetness, percs slowly.	Severe: seepage.	Severe: depth to rock, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Penney	Slight	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
52 Mandarin	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.	Severe: wetness, seepage.	Poor: seepage, too sandy.
53 Penney	Slight	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.

See footnote at end of table.

TABLE 10.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
54*:					
Garcon	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: thin layer.
Eunola	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Fair: too clayey, wetness, thin layer.

* See description of the map unit for [illegible]

TABLE 11.--CONSTRUCTION MATERIALS

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
2---------- Penney	Good----------	Probable----------	Improbable: too sandy.	Poor: too sandy.
4*: Blanton----------	Good----------	Probable----------	Improbable: too sandy.	Poor: too sandy.
Ortega----------	Good----------	Probable----------	Improbable: too sandy.	Poor: too sandy.
5*: Otela----------	Good----------	Probable----------	Improbable: too sandy.	Poor: too sandy.
Penney----------	Good----------	Probable----------	Improbable: too sandy.	Poor: too sandy.
6*: Oaky----------	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
Rawhide----------	Poor: wetness.	Probable----------	Improbable: too sandy.	Poor: wetness.
7*: Chaires----------	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
Chaires----------	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
9*: Sapelo----------	Poor: wetness.	Improbable: excess fines.	Improbable: too sandy.	Poor: too sandy, wetness.
Chaires----------	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
10*, 11*: Pamlico----------	Poor: low strength, wetness.	Probable----------	Improbable: too sandy.	Poor: excess humus, wetness.
Dorovan----------	Poor: wetness.	Probable----------	Improbable: too sandy.	Poor: excess humus, wetness.

TABLE 11.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
13*:				
Meadowbrook	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
Chaires	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
14 Leon	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
15*:				
Wesconnett	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
Lynn Haven	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
16 Tooles	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
18*:				
Surrency	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, wetness.
Plummer	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
Clara	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
20 Plummer	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
24*:				
Rawhide	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.
Harbeson	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
26*:				
Ridgewood	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
Hurricane	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
27*:				
Albany	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.

TABLE 11.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
27*:				
Ridgewood	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
28*:				
Clara	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
Meadowbrook	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
29 Fluvaquents	Poor: wetness.	Probable	Improbable: too sandy.	Poor: thin layer, wetness.
31*, 32*:				
Chaires	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
Meadowbrook	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
33*:				
Tooles	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
Meadowbrook	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
Rawhide	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.
34 Ortega	Good	Probable	Improbable: too sandy.	Poor: too sandy.
36 Wampee	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, small stones.
37*, 38*:				
Pantego	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Surrency	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, wetness.
39 Eunola	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
41*:				
Meadowbrook	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.

See footnote at end of table.

TABLE 11.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
41*:				
Harbeson	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
42*:				
Sapelo	Poor: wetness.	Improbable: excess fines.	Improbable: too sandy.	Poor: too sandy, wetness.
Clara	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
Surrency	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy, wetness.
43*:				
Garcon	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
Albany	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
Meadowbrook	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
44*:				
Albany	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
Ousley	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
Meadowbrook	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
45*:				
Wekiva	Poor: depth to rock, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, wetness.
Rawhide	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.
Tooles	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
46*:				
Tooles	Poor: wetness.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy, wetness.
Rawhide	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.

See footnote at end of table.

TABLE 11.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
48*:				
Otela	Good	Probable	Improbable: too sandy.	Poor: too sandy.
Shadeville	Fair: depth to rock.	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy.
Penney	Good	Probable	Improbable: too sandy.	Poor: too sandy.
52 Mandarin	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
53 Penney	Good	Probable	Improbable: too sandy.	Poor: too sandy.
54*:				
Garcon	Fair: wetness.	Probable	Improbable: too sandy.	Poor: too sandy.
Eunola	Fair: wetness.	Probable	Improbable: too sandy.	Fair: too clayey, small stones, thin layer.

* See description of the map unit for composition and behavior characteristics of the map unit.

tions of "slight,"
nformation in this table

ecting--

Terraces and diversions	Grassed waterways
o sandy, oil blowing.	Droughty.
o sandy, oil blowing.	Droughty.
o sandy, oil blowing.	Droughty.
o sandy, oil blowing.	Droughty.
o sandy, oil blowing.	Droughty.
ness, ercs slowly, oil blowing.	Wetness, droughty, percs slowly.
ading, ercs slowly.	Wetness, percs slowly.
ness, oo sandy, oil blowing.	Wetness, droughty.
ading, oo sandy.	Wetness, droughty.

TABLE 12.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
9*:							
Sapelo	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
Chaires	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: slow refill, cutbanks cave.	Ponding, cutbanks cave.	Ponding, droughty, fast intake.	Ponding, too sandy.	Wetness, droughty.
10*:							
Pamlico	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, flooding, subsides.	Ponding, flooding.	Ponding, too sandy.	Wetness.
Dorovan	Moderate: seepage.	Severe: excess humus, ponding.	Severe: cutbanks cave.	Ponding, flooding, subsides.	Ponding, soil blowing, flooding.	Ponding	Wetness.
11*:							
Pamlico	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, subsides, cutbanks cave.	Ponding, soil blowing.	Ponding, too sandy.	Wetness.
Dorovan	Moderate: seepage.	Severe: excess humus, ponding.	Severe: cutbanks cave.	Ponding, subsides.	Ponding, soil blowing.	Ponding	Wetness.
13*:							
Meadowbrook	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: slow refill, cutbanks cave.	Cutbanks cave	Wetness, droughty.	Wetness, too sandy, soil blowing.	Wetness, droughty.
Chaires	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: slow refill, cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
14 Leon	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty.	Wetness, too sandy, soil blowing.	Wetness, droughty.

See footnote at end of table.

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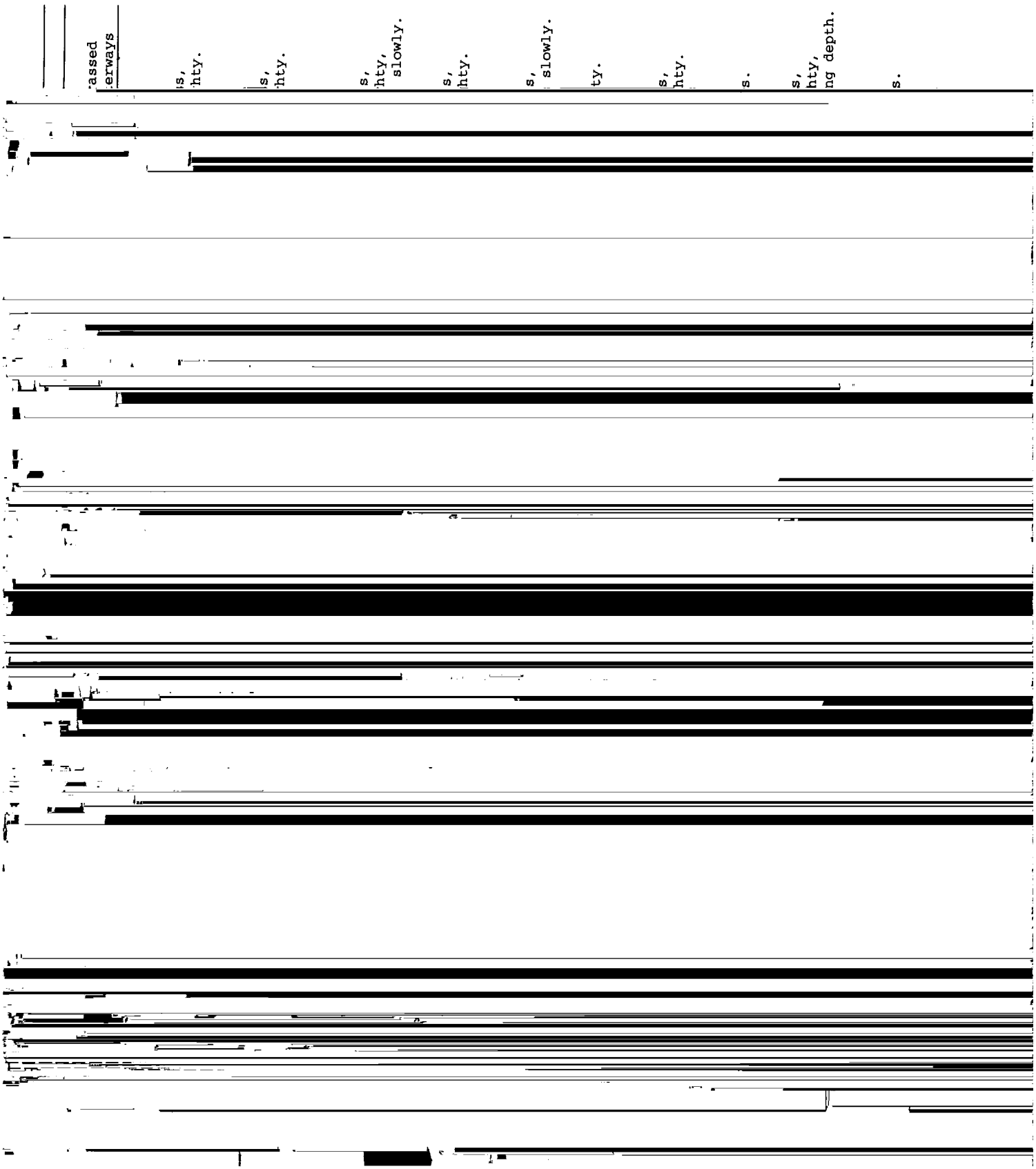
rraces and ersions	Grassed waterways
ng, sandy.	Wetness, droughty.
ng, sandy.	Wetness.
ss, sandy, blowing.	Wetness, droughty, percs slowly.
ng, sandy.	Wetness, droughty, rooting depth.
ng, sandy.	Wetness, droughty.
ng, sandy.	Wetness, droughty.
ss, sandy, blowing.	Wetness, droughty.
ng, s slowly.	Wetness, percs slowly.
ng, sandy.	Wetness, rooting depth.

eatures affecting--		
ation	Terraces and diversions	Grassed waterways
, ty.	Wetness, too sandy, soil blowing.	Droughty.
, ty.	Wetness, too sandy, soil blowing.	Droughty.
, ty.	Wetness, too sandy, soil blowing.	Wetness, droughty.
, ty.	Wetness, too sandy, soil blowing.	Droughty.
, ty, ntake.	Wetness, too sandy.	Wetness, droughty.
, ty, ntake.	Ponding, too sandy.	Wetness, droughty.
, ty, ntake.	Erodes easily, wetness, too sandy.	Wetness, erodes easily, droughty.
, ty, ntake.	Wetness, too sandy, soil blowing.	Wetness, droughty.
ty.	Wetness, too sandy, soil blowing.	Wetness, droughty.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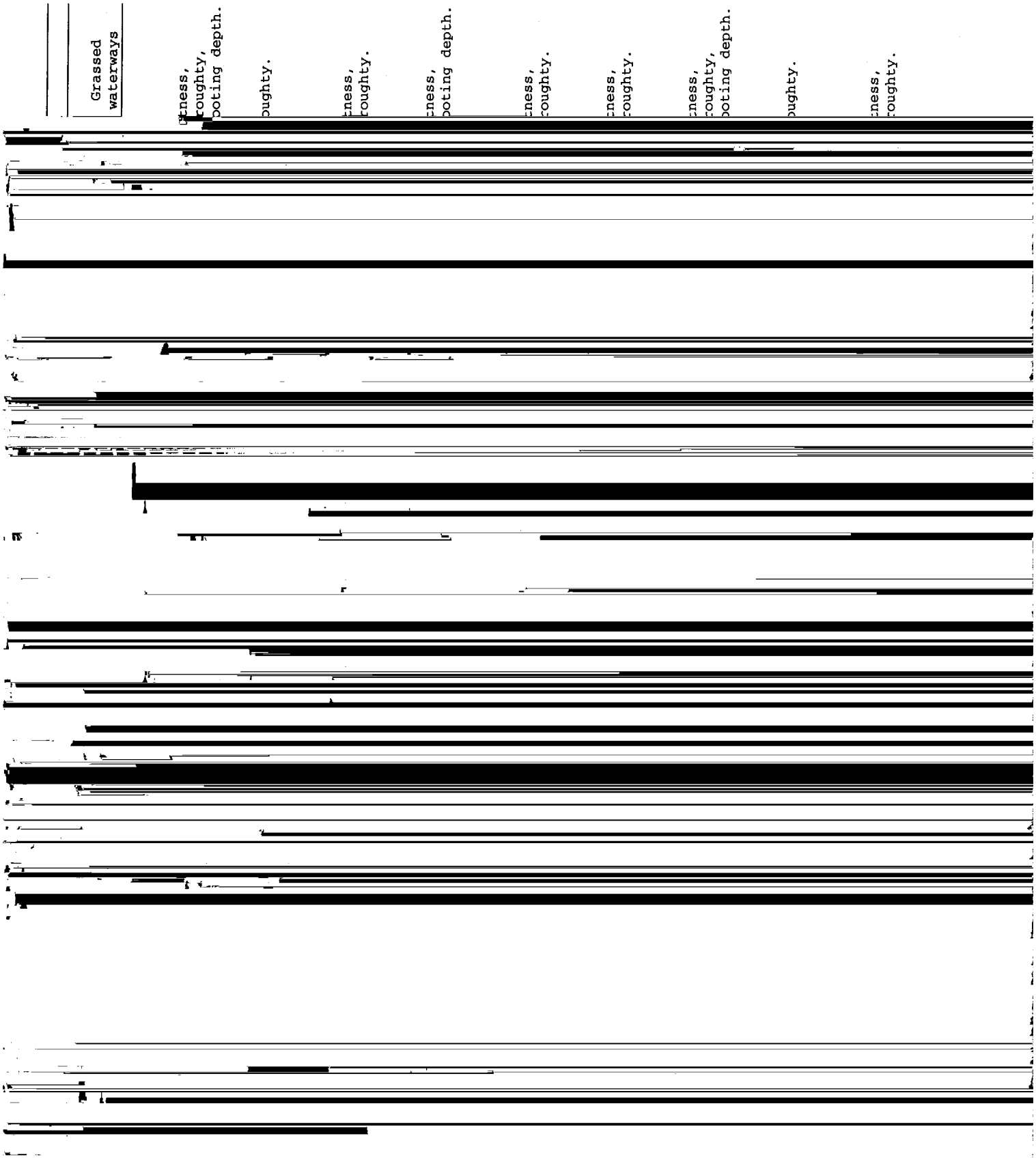
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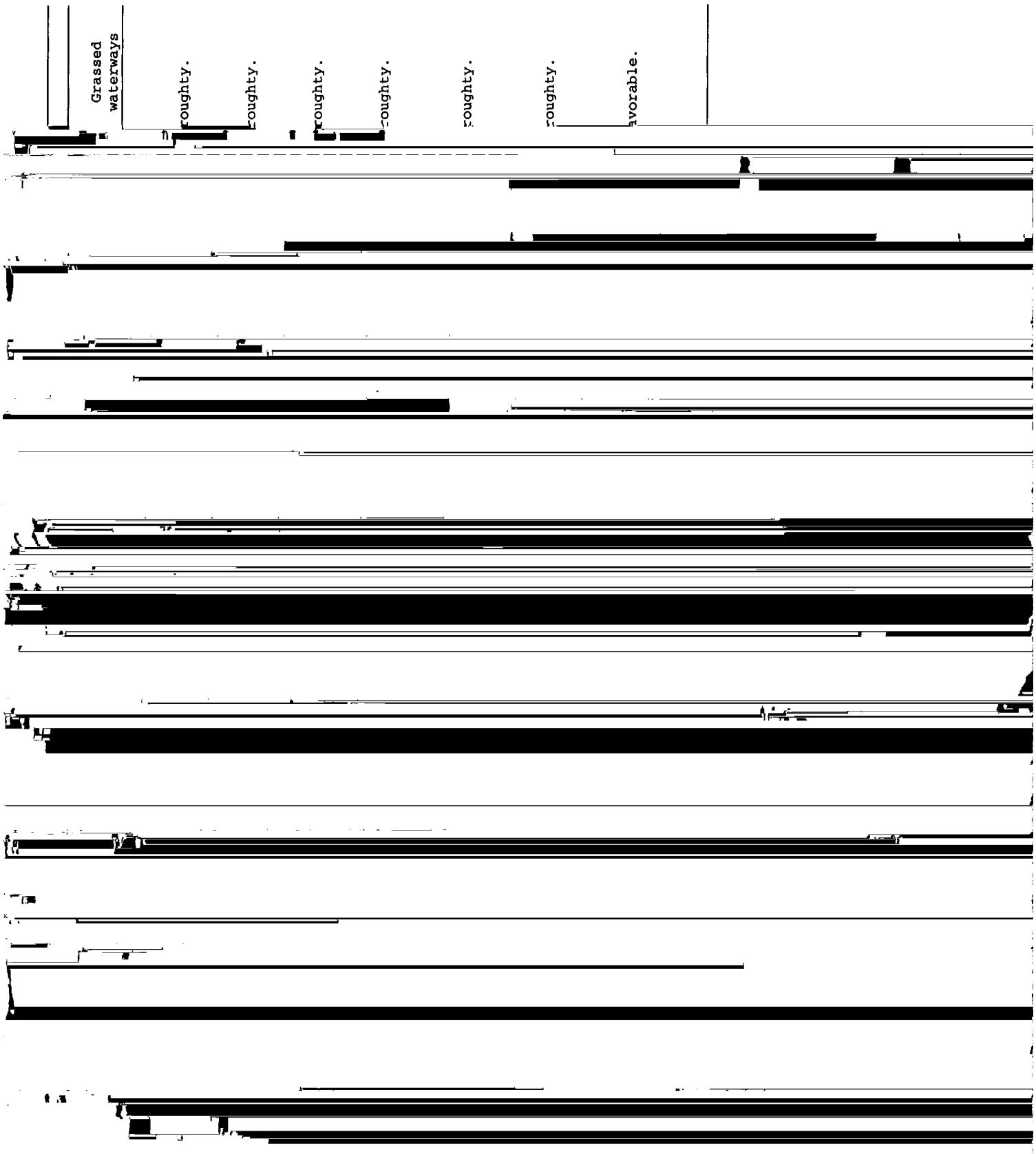
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TABLE 13.--ENGINEERING INDEX PROPERTIES

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
2----------	0-7	Sand----------	SP, SP-SM	A-3	100	95-100	75-100	2-8	---	NP
Penney	7-55	Sand, fine sand	SP, SP-SM	A-3	100	95-100	75-100	2-8	---	NP
	55-80	Sand, fine sand	SP-SM	A-3, A-2-4	100	95-100	75-100	5-12	---	NP
4*:										
Blanton---------	0-44	Fine sand--------	SP-SM, SM	A-3, A-2-4	100	90-100	65-100	5-20	---	NP
	44-80	Sandy clay loam, sandy loam, sandy clay.	SC, SC-SM, SM	A-4, A-2-4, A-2-6, A-6	100	95-100	69-100	25-50	12-45	3-22
Orteqa----------	0-6	Fine sand--------	SP, SP-SM	A-3	100	100	90-100	3-8	---	NP
	6-80	Fine sand, sand	SP, SP-SM	A-3	100	100	90-100	2-7	---	NP
5*:										
Otela----------	0-60	Fine sand--------	SP-SM, SM	A-3, A-2-4	97-100	95-100	75-100	5-15	---	NP
	60-75	Sandy clay loam, sandy loam.	SC, SC-SM, SM	A-2-6, A-2-4, A-4, A-6	97-100	95-100	75-100	20-50	<40	NP-15
	75-80	Sandy clay loam, sandy clay, clay.	SC, CL, CH	A-6, A-7	97-100	95-100	75-100	45-95	35-65	20-39

TABLE 13.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
7*:										
Chaires	0-3	Mucky fine sand	SM, SP, SP-SM	A-2-4, A-3	100	100	80-100	4-15	---	NP
	3-24	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	80-100	2-12	---	NP
	24-50	Sand, fine sand, loamy fine sand.	SP-SM, SM	A-3, A-2-4	100	100	85-100	5-20	---	NP
	50-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2-4, A-2-6	100	100	85-100	20-35	<40	NP-20
9*:										
Sapelo	0-28	Fine sand	SM, SP, SP-SM	A-2, A-3	100	100	85-100	4-20	---	NP
	28-34	Fine sand, sand, loamy fine sand.	SM, SP-SM	A-2, A-3	100	100	80-100	8-20	---	NP
	34-60	Fine sand, sand, loamy fine sand.	SM, SP, SP-SM	A-2, A-3	100	100	75-100	4-20	---	NP
	60-80	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SC-SM	A-2, A-4, A-6	100	100	80-100	20-50	<40	NP-20
Chaires	0-6	Mucky fine sand	SM, SP, SP-SM	A-2-4, A-3	100	100	80-100	4-15	---	NP
	6-25	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	80-100	2-12	---	NP
	25-65	Sand, fine sand, loamy fine sand.	SP-SM, SM	A-3, A-2-4	100	100	85-100	5-20	---	NP
	65-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2-4, A-2-6	100	100	85-100	20-35	<40	NP-20
10*:										
Pamlico	0-31	Muck	PT	---	---	---	---	---	---	---
	31-80	Loamy sand, sand, loamy fine sand.	SM, SP-SM	A-2, A-3	100	100	70-95	5-20	---	NP
Dorovan	0-62	Muck	PT	---	---	---	---	---	---	---
	62-80	Sand, loamy sand, loam.	SP-SM, SC-SM, SM	A-1, A-3, A-4, A-2-4	100	100	5-70	5-49	<20	NP-7
11*:										
Pamlico	0-22	Muck	PT	---	---	---	---	---	---	---
	22-80	Sand, fine sand, loamy sand.	SM, SP-SM	A-2, A-3	100	100	70-95	5-20	---	NP
Dorovan	0-57	Muck	PT	---	---	---	---	---	---	---
	57-80	Sand, loamy sand, loam.	SP-SM, SC-SM, SM	A-1, A-3, A-4, A-2-4	100	100	5-70	5-49	<20	NP-7
13*:										
Meadowbrook	0-8	Fine sand	SP, SP-SM	A-3	100	95-100	70-95	2-10	---	NP
	8-64	Sand, fine sand	SP, SP-SM	A-3	100	95-100	70-95	2-10	---	NP
	64-80	Sandy loam, fine sandy loam,	SM, SC-SM, SC	A-2-4, A-2-6	100	95-100	70-99	13-35	<35	NP-20

TABLE 13.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
13*:										
Chaires	0-5	Fine sand	SP, SP-SM	A-3, A-2-4	100	100	85-100	2-12	---	NP
	5-24	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	80-100	2-12	---	NP
	24-60	Sand, fine sand, loamy fine sand.	SP-SM, SM	A-3, A-2-4	100	100	85-100	5-20	---	NP
	60-80	Sandy clay loam, fine sandy loam, sandy loam.	SC, SC-SM, SM	A-2-4, A-2-6,	100	100	85-100	20-35	<40	NP-20
14	0-4	Fine sand	SP, SP-SM	A-3, A-2-4	100	100	80-100	2-12	---	NP
Leon	4-10	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	80-100	2-12	---	NP
	10-17	Sand, fine sand, loamy sand.	SM, SP-SM, SP	A-3, A-2-4	100	100	80-100	3-20	---	NP
	17-63	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	80-100	2-12	---	NP
	63-80	Sand, fine sand, loamy sand.	SM, SP-SM, SP	A-3, A-2-4	100	100	80-100	3-20	---	NP
15*:										
Wesconnett	0-14	Mucky fine sand	SP-SM	A-3, A-2-4	100	100	80-100	5-12	---	NP
	14-28	Fine sand, sand	SP-SM, SM	A-3, A-2-4	100	100	80-100	5-15	---	NP
	28-45	Fine sand, sand	SP-SM	A-3, A-2-4	100	100	80-100	5-12	---	NP
	45-61	Fine sand, sand	SP-SM, SM	A-3, A-2-4	100	100	80-100	5-15	---	NP
	61-80	Fine sand, sand	SP-SM	A-3, A-2-4	100	100	80-100	5-12	---	NP
Lynn Haven	0-13	Mucky fine sand	SM, SP, SP-SM	A-2-4, A-3	100	100	80-100	4-15	---	NP
	13-19	Sand, fine sand	SP-SM, SP	A-3	100	100	80-100	2-10	---	NP
	19-80	Sand, fine sand, loamy fine sand.	SP-SM, SM	A-3, A-2-4	100	100	80-100	5-20	---	NP
16	0-35	Sand, fine sand	SP-SM, SM	A-3, A-2-4	100	100	85-95	5-15	---	NP
Tooles	35-50	Sandy clay loam, clay loam.	SC, CL	A-6	100	100	85-95	36-55	25-30	11-15
	50	Unweathered bedrock.	---	---	---	---	---	---	---	---
18*:										
Surrency	0-10	Mucky fine sand	SP-SM, SM, SC-SM	A-3, A-2-4	100	95-100	50-100	5-20	<20	NP-5
	10-28	Loamy sand, sand, fine sand.	SP-SM, SM	A-2-4	100	95-100	50-100	10-26	---	NP
	28-45	Sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2	100	95-100	75-100	22-35	<30	NP-10
	45-80	Sandy clay loam	SM, SC, SC-SM	A-2, A-4, A-6	100	95-100	80-100	30-44	<35	NP-15
Plummer	0-8	Fine sand	SM, SP-SM	A-2-4, A-3	100	100	75-90	5-20	---	NP
	8-50	Sand, fine sand, loamy fine sand.	SM, SP-SM	A-2-4, A-3	100	100	75-96	5-26	---	NP
	50-72	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SC-SM	A-2-4, A-4	100	96-100	76-96	20-48	<30	NP-10
Clara	0-9	Mucky fine sand	SP, SP-SM	A-3	100	100	85-100	1-5	---	NP
	9-29	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	85-100	2-12	---	NP
	29-46	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	85-100	2-12	---	NP
	46-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	85-100	2-12	---	NP

TABLE 13.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
20---------- Plummer	0-7	Fine sand--------	SM, SP-SM	A-2-4, A-3	100	100	75-90	5-20	---	NP
	7-55	Fine sand, sand, loamy fine sand.	SM, SP-SM	A-2-4, A-3	100	100	75-96	5-26	---	NP
	55-80	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SC-SM	A-2-4, A-4	100	96-100	76-96	20-48	<30	NP-10
24*: Rawhide----------	0-6	Mucky fine sand	SM, SP-SM	A-3, A-2-4	100	100	85-100	5-20	---	NP
	6-40	Sandy loam, fine sandy loam, sandy clay loam.	SC	A-2-4, A-2-6	100	100	85-100	20-45	23-38	7-15
	40-80	Loamy fine sand, sandy clay loam, sandy loam.	SP-SM, SM, SC	A-2-4, A-2-6	100	100	80-100	12-25	<40	NP-10
Harbeson--------	0-18	Mucky fine sand	SM, SP-SM	A-2	100	98-100	75-95	10-25	---	NP
	18-55	Loamy fine sand, fine sand, sand	SM, SP-SM	A-3, A-2-4	100	98-100	70-95	5-25	---	NP
	55-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2-4, A-2-6	100	98-100	75-100	15-45	<40	3-20
26*: Ridgewood-------	0-6	Fine sand--------	SP-SM	A-3, A-2-4	100	100	90-100	5-12	---	NP
	6-80	Fine sand, sand	SP-SM, SP	A-3, A-2-4	100	100	90-100	2-12	---	NP
Hurricane-------	0-5	Fine sand--------	SP, SP-SM	A-3	100	100	78-100	4-8	---	NP
	5-51	Sand, fine sand	SP, SP-SM	A-3	100	100	78-100	4-8	---	NP
	51-80	Sand, fine sand, loamy fine sand.	SP-SM, SM	A-3, A-2-4	100	100	80-100	5-15	---	NP
27*: Albany----------	0-64	Fine sand--------	SM, SP-SM	A-2	100	100	75-90	10-20	---	NP
	64-80	Sandy clay loam, sandy loam, fine sandy loam.	SC, SM, SC-SM	A-2, A-4, A-6	97-100	95-100	70-100	20-50	<40	NP-17
Ridgewood-------	0-6	Fine sand--------	SP-SM	A-3, A-2-4	100	100	90-100	5-12	---	NP
	6-80	Fine sand, sand	SP-SM, SP	A-3, A-2-4	100	100	90-100	2-12	---	NP
28*: Clara----------	0-6	Mucky fine sand	SP, SP-SM	A-3	100	100	85-100	1-5	---	NP
	6-18	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	85-100	2-12	---	NP
	18-48	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	85-100	2-12	---	NP
	48-80	Sand, fine sand, loamy fine sand.	SP, SP-SM, SM	A-3, A-2-4	100	100	85-100	2-16	---	NP
Meadowbrook-----	0-6	Mucky fine sand	SM, SP, SP-SM	A-2-4, A-3	100	95-100	70-100	4-15	---	NP
	6-45	Sand, fine sand	SP, SP-SM	A-3	100	95-100	70-95	2-10	---	NP
	45-80	Sandy loam, fine sandy loam, sandy clay loam.	SM	A-2-4	100	95-100	70-99	13-35	<35	NP-10
29---------- Fluvaquents	0-3	Mucky fine sand	SM, SP, SP-SM	A-2-4, A-3	100	100	80-100	4-15	---	NP

TABLE 13.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
31*:										
Chaires	0-6	Fine sand	SM, SP, SP-SM	A-2-4, A-3	100	100	80-100	4-15	---	NP
	6-23	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	80-100	2-12	---	NP
	23-46	Sand, fine sand, loamy fine sand.	SP-SM, SM	A-3, A-2-4	100	100	85-100	5-20	---	NP
	46-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2-4, A-2-6	100	100	85-100	20-35	<40	NP-20
Meadowbrook	0-7	Fine sand	SP, SP-SM	A-3	100	95-100	70-95	2-10	---	NP
	7-45	Sand, fine sand	SP, SP-SM	A-3	100	95-100	70-95	2-10	---	NP
	45-70	Loamy sand, sandy loam, fine sandy loam.	SM, SC-SM	A-2-4	100	95-100	70-99	15-30	<25	NP-7
	70-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2-4, A-2-6	100	95-100	70-99	13-35	<35	NP-20
32*:										
Chaires	0-6	Mucky fine sand	SM, SP, SP-SM	A-2-4, A-3	100	100	80-100	4-15	---	NP
	6-24	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	80-100	2-12	---	NP
	24-52	Sand, fine sand, loamy fine sand.	SP-SM, SM	A-3, A-2-4	100	100	85-100	5-20	---	NP
	52-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2-4, A-2-6	100	100	85-100	20-35	<40	NP-20
Meadowbrook	0-4	Mucky fine sand	SM, SP, SP-SM	A-2-4, A-3	100	100	70-100	4-15	---	NP
	4-42	Sand, fine sand	SP, SP-SM	A-3	100	95-100	70-95	2-10	---	NP
	42-65	Loamy sand, sandy loam, fine sandy loam.	SM, SC-SM	A-2-4	100	95-100	70-99	15-30	<25	NP-7
	65-80	Sandy loam, fine sandy loam, sandy clay loam.	SM	A-2-4	100	95-100	70-99	13-35	<35	NP-10
33*:										
Tooles	0-5	Fine sand	SP-SM, SM	A-3, A-2-4	100	100	85-95	5-15	---	NP
	5-25	Sand, fine sand	SP-SM, SM	A-3, A-2-4	100	100	85-95	5-15	---	NP
	25-42	Sandy clay loam, clay loam.	SC, CL	A-6	100	100	85-95	36-55	25-30	11-15
	42	Unweathered bedrock.	---	---	---	---	---	---	---	---
Meadowbrook	0-6	Fine sand	SP-SM	A-3	100	100	95-100	5-10	---	NP
	6-42	Sand, fine sand	SP, SP-SM	A-3	100	100	95-100	3-8	---	NP
	42-55	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2, A-4, A-6	100	100	95-100	15-40	<40	3-20
	55	Unweathered bedrock.	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 13.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
33*:										
Rawhide	0-10	Mucky fine sand	SM, SP-SM	A-3, A-2-4	100	100	85-100	5-20	---	NP
	10-45	Sandy loam, fine sandy loam, sandy clay loam.	SC	A-2-4, A-2-6	100	100	85-100	20-45	23-38	7-15
	45-80	Fine sand, loamy sand, sandy clay loam.	SP-SM, SM, SC	A-2-4, A-2-6	100	100	80-100	12-25	<40	NP-10
34	0-6	Fine sand	SP, SP-SM	A-3	100	100	90-100	3-8	---	NP
Ortega	6-80	Fine sand, sand	SP, SP-SM	A-3	100	100	90-100	2-7	---	NP
36	0-6	Fine sand	SP-SM	A-3, A-2	90-100	80-100	70-98	5-12	---	NP
Wampee	6-32	Loamy fine sand, gravelly fine sand, loamy sand, sand, fine sand.	SM, SP-SM	A-3, A-2	80-100	68-98	65-95	5-30	---	NP
	32-80	Sandy clay loam, gravelly sandy clay loam, sandy loam.	SC-SM, SC	A-2, A-4, A-6	80-100	68-98	65-95	25-50	16-40	4-20
37*:										
Pantego	0-10	Mucky loamy sand	SM, SP-SM	A-2	100	95-100	60-100	12-30	---	NP
	10-45	Sandy loam, sandy clay loam, clay loam.	SC, SM, CL, ML	A-2, A-4, A-6	100	95-100	65-100	30-80	20-40	4-16
	45-80	Clay loam, sandy clay loam, sandy clay.	CL, SC	A-6, A-7	100	95-100	80-100	36-80	25-49	11-24
Surrency	0-8	Mucky fine sand	SP-SM, SM, SC-SM	A-3, A-2-4	100	95-100	50-100	5-20	<20	NP-5
	8-32	Loamy sand, sand, fine sand.	SP-SM, SM	A-2-4	100	95-100	50-100	10-26	---	NP
	32-60	Sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2	100	95-100	75-100	22-35	<30	NP-10
	60-80	Sandy clay loam	SM, SC, SC-SM	A-2, A-4, A-6	100	95-100	80-100	30-44	<35	NP-15
38*:										
Pantego	0-8	Mucky loamy sand	SM, SP-SM	A-2	100	95-100	60-95	12-30	<35	NP
	8-19	Sandy clay loam, sandy loam, clay loam.	SC, CL, SC-SM, CL-ML	A-4, A-6, A-2	100	95-100	65-100	30-80	20-40	4-16
	19-80	Clay loam, sandy clay, sandy clay loam.	CL, SC	A-6, A-7	100	95-100	80-100	36-80	25-49	11-24
Surrency	0-6	Mucky fine sand	SP-SM, SM, SC-SM	A-3, A-2-4	100	95-100	50-100	5-20	<20	NP-5
	6-32	Loamy sand, sand, fine sand.	SP-SM, SM	A-2-4	100	95-100	50-100	10-26	---	NP
	32-60	Sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2	100	95-100	75-100	22-35	<30	NP-10
	60-80	Sandy clay loam	SM, SC, SC-SM	A-2, A-4, A-6	100	95-100	80-100	30-44	<35	NP-15

See footnote at end of table.

TABLE 13.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
39----------	0-18	Fine sand--------	SM, SP-SM	A-2, A-3	100	95-100	70-100	8-35	---	NP
Eunola	18-58	Sandy clay loam, sandy clay, sandy loam.	SC, CL	A-4, A-6, A-7	100	95-100	80-100	36-60	20-45	7-20
	58-80	Sand, loamy sand, fine sand.	SM, SP-SM	A-2, A-3	100	98-100	50-75	5-30	---	NP
41*:										
Meadowbrook-----	0-6	Mucky fine sand	SM, SP, SP-SM	A-2-4, A-3	100	100	70-100	4-15	---	NP
	6-45	Sand, fine sand	SP, SP-SM	A-3	100	95-100	70-95	2-10	---	NP
	45-80	Sandy loam, fine sandy loam, sandy clay loam.	SM	A-2-4	100	95-100	70-99	13-35	<35	NP-10
Harbeson--------	0-12	Mucky fine sand	SM, SP-SM	A-2	100	98-100	75-95	10-25	---	NP
	12-63	Loamy fine sand, sand, fine sand.	SM, SP-SM	A-3, A-2-4	100	98-100	70-95	5-25	---	NP
	63-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2-4, A-2-6	100	98-100	75-100	15-45	<40	3-20
42*:										
Sapelo----------	0-18	Fine sand--------	SM, SP, SP-SM	A-2, A-3	100	100	85-100	4-20	---	NP
	18-40	Fine sand, sand, loamy fine sand.	SM, SP-SM	A-2, A-3	100	100	80-100	8-20	---	NP
	40-56	Fine sand, sand, loamy fine sand.	SM, SP, SP-SM	A-2, A-3	100	100	75-100	4-20	---	NP
	56-80	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SC-SM	A-2, A-4, A-6	100	100	80-100	20-50	<40	NP-20
Clara-----------	0-4	Fine sand--------	SP, SP-SM	A-3	100	100	85-100	1-5	---	NP
	4-15	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	85-100	2-12	---	NP
	15-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	85-100	2-12	---	NP
Surrency--------	0-7	Mucky fine sand	SP-SM, SM, SC-SM	A-3, A-2-4	100	95-100	50-100	5-20	<20	NP-5
	7-32	Loamy sand, sand, fine sand.	SP-SM, SM	A-2-4	100	95-100	50-100	10-26	---	NP
	32-80	Sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2	100	95-100	75-100	22-35	<30	NP-10
43*:										
Garcon----------	0-7	Fine sand--------	SP-SM, SM	A-3, A-2-4	100	95-100	80-95	8-20	---	NP
	7-26	Loamy fine sand, fine sand.	SP-SM, SM	A-2-4, A-3	100	95-100	80-95	8-20	---	NP
	26-51	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC-SM	A-2-4	100	85-100	80-95	18-35	<25	NP-7
	51-80	Fine sand--------	SP-SM, SM, SP	A-2, A-3, A-2-4	100	90-100	75-95	4-12	---	NP

TABLE 13.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
43*:										
Meadowbrook	0-6	Fine sand	SP, SP-SM	A-3	100	95-100	70-95	2-10	---	NP
	6-45	Sand, fine sand	SP, SP-SM	A-3	100	95-100	70-95	2-10	---	NP
	45-80	Sandy loam, fine sandy loam, sandy clay loam.	SM	A-2-4	100	95-100	70-99	13-35	<35	NP-10
44*:										
Albany	0-53	Fine sand	SM, SP-SM	A-2	100	100	75-90	10-20	---	NP
	53-80	Sandy clay loam, sandy loam, fine sandy loam.	SC, SM, SC-SM	A-2, A-4, A-6	97-100	95-100	70-100	20-50	<40	NP-17
Ousley	0-4	Fine sand	SP-SM, SM	A-2, A-3	100	100	70-100	5-25	---	NP
	4-80	Sand, fine sand.	SP-SM, SM, SP	A-1, A-2, A-3	100	95-100	36-99	2-15	---	NP
Meadowbrook	0-6	Fine sand	SP, SP-SM	A-3	100	95-100	70-95	2-10	---	NP
	6-45	Sand, fine sand	SP, SP-SM	A-3	100	95-100	70-95	2-10	---	NP
	45-80	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC-SM, SC	A-2-4, A-2-6	100	95-100	70-99	13-35	<35	NP-20
45*:										
Wekiva	0-6	Fine sand	SM, SP-SM	A-3, A-2-4	98-100	98-100	98-100	6-18	---	NP
	6-14	Fine sand, loamy fine sand.	SM, SP-SM	A-3, A-2-4	98-100	98-100	98-100	6-18	---	NP
	14-26	Fine sandy loam, sandy clay loam.	SC, SC-SM, SM	A-6, A-2-4, A-4, A-2-6	98-100	98-100	97-100	25-45	<40	NP-24
	26	Unweathered bedrock.	---	---	---	---	---	---	---	---
Rawhide	0-8	Mucky fine sand	SM, SP-SM	A-3, A-2-4	100	100	85-100	5-20	---	NP
	8-68	Sandy loam, fine sandy loam, sandy clay loam.	SC	A-2-4, A-2-6	100	100	85-100	20-45	23-38	7-15
	68-80	Fine sand, loamy sand, sandy clay loam.	SP-SM, SM, SC	A-2-4, A-2-6	100	100	80-100	12-25	<40	NP-10
Tooles	0-6	Fine sand	SP-SM, SM	A-3, A-2-4	100	100	85-95	5-15	---	NP
	6-32	Sand, fine sand	SP-SM, SM	A-3, A-2-4	100	100	85-95	5-15	---	NP
	32-45	Sandy clay loam, clay loam.	SC, CL	A-6	100	100	85-95	36-55	25-30	11-15
	45	Unweathered bedrock.	---	---	---	---	---	---	---	---
46*:										

TABLE 13.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
46*:										
Rawhide	0-18	Mucky fine sand	SM, SP-SM	A-3, A-2-4	100	100	85-100	5-20	---	NP
	18-40	Sandy loam, fine sandy loam, sandy clay loam.	SC	A-2-4, A-2-6	100	100	85-100	20-45	23-38	7-15
	40-80	Loamy fine sand, sandy loam, sandy clay loam.	SP-SM, SM, SC	A-2-4, A-2-6	100	100	80-100	12-25	<40	NP-10
48*:										
Otela	0-58	Fine sand	SP-SM, SM	A-3, A-2-4	97-100	95-100	75-95	5-15	---	NP
	58-72	Sandy loam, sandy clay loam.	SC, SC-SM, SM	A-4, A-6, A-2-4, A-2-6	97-100	95-100	75-95	20-50	<40	NP-15
	72	Unweathered bedrock.	---	---	---	---	---	---	---	---
Shadeville	0-8	Fine sand	SP-SM, SM	A-3, A-2-4	100	100	85-100	5-15	---	NP
	8-28	Sand, fine sand	SP-SM, SM	A-3, A-2-4	100	100	85-100	5-15	---	NP
	28-55	Sandy loam, fine sandy loam, sandy clay loam.	SC-SM, SC, SM	A-2-4, A-2-6, A-4, A-6	100	100	85-100	20-45	<35	NP-20
	55	Weathered bedrock	---	---	---	---	---	---	---	---
Penney	0-7	Fine sand	SP, SP-SM	A-3	100	95-100	75-100	2-8	---	NP
	7-54	Sand, fine sand	SP, SP-SM	A-3	100	95-100	75-100	2-8	---	NP
	54-80	Sand, fine sand	SP-SM	A-3, A-2-4	100	95-100	75-100	5-12	---	NP
52	0-25	Fine sand	SP, SP-SM	A-3	100	100	90-100	2-10	---	NP
Mandarin	25-37	Fine sand, sand, loamy fine sand.	SP-SM, SM	A-3, A-2-4	100	100	90-100	5-15	---	NP
	37-80	Fine sand, sand	SP, SP-SM	A-3	100	100	90-100	2-7	---	NP
53	0-4	Fine sand	SP, SP-SM	A-3	100	95-100	75-100	2-8	---	NP
Penney	4-55	Sand, fine sand	SP, SP-SM	A-3	100	95-100	75-100	2-8	---	NP
	55-80	Sand, fine sand	SP-SM	A-3, A-2-4	100	95-100	75-100	5-12	---	NP
54*:										
Garcon	0-6	Fine sand	SP-SM, SM	A-3, A-2-4	100	95-100	80-95	8-20	---	NP
	6-23	Loamy fine sand, loamy sand, fine sand.	SP-SM, SM	A-2-4, A-3	100	95-100	80-95	8-20	---	NP
	23-58	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC-SM	A-2-4	100	85-100	80-95	18-35	<25	NP-7
	58-80	Fine sand, sand	SP-SM, SP	A-3	100	98-100	75-95	4-10	---	NP
Eunola	0-15	Fine sand	SM, SP-SM	A-2, A-4, A-2-4	100	98-100	50-80	10-38	---	NP
	15-39	Sandy clay loam, clay loam, fine sandy loam.	SM, SC, SC-SM, CL	A-4, A-2, A-6	100	90-100	75-95	30-60	<36	NP-15
	39-55	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4	100	98-100	60-70	30-40	<30	NP-10
	55-80	Sand, loamy sand, fine sand.	SM, SP-SM	A-2, A-3	100	98-100	50-75	5-30	---	NP

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 14.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

(The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Organic matter" apply only to the surface layer.

[redacted]

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
2----------	0-7	0-3	1.30-1.55	6.0-20	0.04-0.09	3.6-6.0	Low----------	0.10	5	1	0-2
Penney	7-55	0-3	1.35-1.65	6.0-20	0.02-0.07	3.6-6.0	Low----------	0.10			
	55-80	2-6	1.50-1.65	6.0-20	0.05-0.08	3.6-6.0	Low----------	0.10			
4*:											
Blanton---------	0-44	1-7	1.30-1.60	6.0-20	0.03-0.07	4.5-6.0	Low----------	0.10	5	1	.5-1
	44-80	12-40	1.60-1.70	0.2-2.0	0.10-0.15	4.5-5.5	Low----------	0.20			
Ortega----------	0-6	1-3	1.20-1.45	6.0-20	0.05-0.08	3.6-6.5	Low----------	0.10	5	1	1-2
	6-80	1-3	1.35-1.60	6.0-20	0.03-0.06	3.6-6.5	Low----------	0.10			
5*:											
Otela-----------	0-60	0-5	1.45-1.65	6.0-20	0.05-0.10	4.5-7.3	Low----------	0.10	5	1	<2
	60-75	8-35	1.55-1.75	0.2-2.0	0.06-0.15	3.6-7.8	Low----------	0.20			
	75-80	30-65	1.55-1.75	0.06-0.6	0.08-0.18	3.6-8.4	Moderate-----	0.24			
Penney----------	0-7	0-3	1.30-1.55	6.0-20	0.04-0.09	3.6-6.0	Low----------	0.10	5	1	0-2
	7-60	0-3	1.35-1.65	6.0-20	0.02-0.07	3.6-6.0	Low----------	0.10			
	60-80	2-6	1.50-1.65	6.0-20	0.05-0.08	3.6-6.0	Low----------	0.10			
6*:											
Oaky------------	0-6	<3	1.40-1.50	6.0-20	0.05-0.10	4.5-6.5	Low----------	0.10	5	1	1-2
	6-13	<3	1.45-1.60	6.0-20	0.02-0.05	4.5-6.5	Low----------	0.10			
	13-51	10-35	1.55-1.65	0.06-0.2	0.10-0.25	6.1-7.8	Low----------	0.20			
	51-80	10-30	1.40-1.65	2.0-6.0	0.10-0.15	6.1-7.8	Low----------	0.15			
Rawhide---------	0-6	2-8	1.10-1.35	6.0-20	0.15-0.25	5.6-6.5	Low----------	0.10	5	8	10-20
	6-65	18-35	1.40-1.60	<0.2	0.10-0.15	6.1-8.4	Low----------	0.20			
	65-80	3-30	1.45-1.70	2.0-6.0	0.05-0.15	6.1-8.4	Low----------	0.15			
7*:											
Chaires---------	0-24	1-3	1.10-1.45	6.0-20	0.05-0.15	3.6-5.5	Low----------	0.10	5	1	1-3
	24-46	2-13	1.45-1.60	0.6-2.0	0.15-0.20	3.6-5.5	Low----------	0.20			
	46-72	15-35	1.60-1.70	0.2-0.6	0.10-0.20	4.5-7.3	Low----------	0.24			
[illegible]											

TABLE 14.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
10*:											
Dorovan	0-62	---	0.25-0.40	0.6-2.0	0.20-0.25	3.6-4.4	---	---	---	8	20-80
	62-80	5-20	1.40-1.65	6.0-20	0.05-0.08	4.5-5.5	Low	---			
11*:											
Pamlico	0-22	---	0.20-0.65	0.6-6.0	0.24-0.40	3.6-4.4	Low	---	---	8	20-80
	22-80	5-10	1.60-1.75	6.0-20	0.02-0.10	3.6-5.5	Low	0.10			
Dorovan	0-57	---	0.25-0.40	0.6-2.0	0.20-0.25	3.6-4.4	---	---	---	8	20-80
	57-80	5-20	1.40-1.65	6.0-20	0.05-0.08	4.5-5.5	Low	---			
13*:											
Meadowbrook	0-8	0-3	1.35-1.65	6.0-20	0.05-0.10	3.6-7.3	Low	0.10	5	1	1-3
	8-64	1-6	1.35-1.65	6.0-20	0.03-0.08	3.6-8.4	Low	0.10			
	64-80	11-22	1.50-1.80	0.2-2.0	0.10-0.15	4.5-8.4	Low	0.15			
Chaires	0-5	1-3	1.10-1.45	6.0-20	0.05-0.15	3.6-5.5	Low	0.10	5	1	1-3
	5-24	0-3	1.45-1.55	6.0-20	0.02-0.05	3.6-5.5	Low	0.10			
	24-60	2-13	1.45-1.60	0.6-2.0	0.15-0.20	3.6-5.5	Low	0.20			
	60-80	15-35	1.25-1.70	0.06-0.2	0.12-0.20	4.5-7.3	Moderate	0.32			
14	0-4	1-5	1.30-1.45	6.0-20	0.05-0.15	3.6-6.5	Low	0.10	5	1	1-3
Leon	4-10	<3	1.40-1.60	6.0-20	0.02-0.08	3.6-6.5	Low	0.10			
	10-17	2-8	1.25-1.65	0.6-6.0	0.15-0.30	3.6-6.5	Low	0.15			
	17-63	1-4	1.50-1.65	2.0-20	0.05-0.13	3.6-6.5	Low	0.10			
	63-80	2-8	1.50-1.70	0.6-6.0	0.15-0.30	3.6-6.5	Low	0.15			
15*:											
Wesconnett	0-14	2-7	1.10-1.30	6.0-20	0.15-0.30	3.6-6.5	Low	0.10	5	8	10-20
	14-28	3-8	1.30-1.55	0.6-6.0	0.10-0.15	3.6-6.5	Low	0.15			
	28-45	2-7	1.35-1.50	6.0-20	0.05-0.08	3.6-6.5	Low	0.10			
	45-61	2-8	1.40-1.65	0.6-6.0	0.10-0.15	3.6-6.5	Low	0.15			
	61-80	2-7	1.35-1.50	6.0-20	0.05-0.08	3.6-6.5	Low	0.10			
Lynn Haven	0-13	2-5	0.80-1.35	6.0-20	0.15-0.32	3.6-5.5	Low	0.10	5	8	10-20
	13-19	1-4	1.40-1.60	6.0-20	0.05-0.07	3.6-5.5	Low	0.10			
	19-80	2-8	1.50-1.65	0.6-6.0	0.15-0.30	3.6-5.5	Low	0.15			
16	0-35	2-5	1.35-1.60	6.0-20	0.05-0.10	4.5-7.3	Low	0.10	4	1	1-4
Tooles	35-50	20-35	1.40-1.70	0.06-0.2	0.15-0.20	6.6-8.4	Moderate	0.28			
	50	---	---	2.0-20	---	---	---	---			
18*:											
Surrency	0-10	2-8	0.80-1.25	6.0-20	0.15-0.30	3.6-5.5	Low	0.10	5	8	10-20
	10-28	<10	1.50-1.65	2.0-20	0.05-0.10	3.6-5.5	Low	0.10			
	28-45	10-23	1.60-1.85	0.6-6.0	0.06-0.10	3.6-5.5	Low	0.15			
	45-80	22-35	1.65-1.85	0.6-2.0	0.10-0.15	3.6-5.5	Low	0.15			
Plummer	0-8	1-7	1.33-1.65	6.0-20.0	0.03-0.20	3.6-5.5	Low	0.10	5	8	1-10
	8-50	1-7	1.35-1.65	2.0-20.0	0.03-0.08	3.6-5.5	Low	0.10			
	50-72	15-30	1.50-1.70	0.2-2.0	0.07-0.15	3.6-5.5	Low	0.15			
Clara	0-9	0-4	1.15-1.30	6.0-20	0.15-0.20	3.6-7.3	Low	0.10	5	8	9-20
	9-29	1-3	1.40-1.55	6.0-20	0.05-0.10	3.6-7.3	Low	0.10			
	29-46	1-6	1.40-1.65	6.0-20	0.10-0.15	3.6-7.3	Low	0.10			
	46-80	1-12	1.50-1.70	6.0-20	0.05-0.15	3.6-7.3	Low	0.10			

TABLE 14.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
24*:											
Rawhide	0-6	2-8	1.10-1.35	6.0-20	0.15-0.25	5.6-6.5	Low	0.10	5	8	10-20
	6-40	18-35	1.40-1.60	<0.2	0.10-0.15	6.1-8.4	Low	0.20			
	40-80	3-30	1.45-1.70	2.0-6.0	0.05-0.15	6.1-8.4	Low	0.15			
Harbeson	0-18	3-9	0.80-1.30	2.0-20	0.20-0.25	4.5-7.8	Low	0.10	5	8	9-20
	18-55	3-9	1.50-1.75	6.0-20	0.03-0.10	4.5-7.8	Low	0.10			
	55-80	10-30	1.60-1.85	0.2-2.0	0.10-0.20	5.6-8.4	Moderate	0.17			
26*:											
Ridgewood	0-6	1-3	1.35-1.55	6.0-20	0.05-0.15	4.5-7.3	Low	0.10	5	1	<2
	6-80	0-5	1.35-1.65	6.0-20	0.03-0.10	4.5-7.3	Low	0.10			
Hurricane	0-5	1-4	1.35-1.60	>6.0	0.03-0.15	3.6-7.3	Low	0.10	5	1	<2
	5-51	1-4	1.35-1.65	>6.0	0.03-0.12	3.6-7.3	Low	0.10			
	51-80	2-8	1.55-1.80	2.0-6.0	0.10-0.20	3.6-6.0	Low	0.15			
27*:											
Albany	0-64	1-10	1.40-1.55	6.0-20	0.02-0.04	3.6-6.5	Low	0.10	5	1	1-2
	64-80	13-35	1.55-1.65	0.2-2.0	0.10-0.16	4.5-6.0	Low	0.24			
Ridgewood	0-6	1-3	1.23-1.55	6.0-20	0.05-0.15	4.5-7.3	Low	0.10	5	1	<2
	6-80	0-5	1.35-1.65	6.0-20	0.03-0.10	4.5-7.3	Low	0.10			
28*:											
Clara	0-6	0-4	1.15-1.30	6.0-20	0.15-0.20	3.6-7.3	Low	0.10	5	8	9-20
	6-18	1-3	1.40-1.55	6.0-20	0.05-0.10	3.6-7.3	Low	0.10			
	18-48	1-6	1.40-1.65	6.0-20	0.10-0.15	3.6-7.3	Low	0.10			
	48-80	1-12	1.50-1.70	6.0-20	0.05-0.15	3.6-7.3	Low	0.10			
Meadowbrook	0-6	2-5	1.10-1.35	6.0-20	0.15-0.10	3.6-7.3	Low	0.10	5	8	10-20
	6-45	1-6	1.35-1.65	6.0-20	0.03-0.08	3.6-8.4	Low	0.10			
	45-80	11-32	1.50-1.65	0.2-2.0	0.10-0.15	4.5-8.4	Low	0.20			
29	0-3	2-5	1.10-1.35	6.0-20	0.15-0.20	5.6-7.8	Low	0.10	5	8	10-20
Fluvaquents	3-40	8-30	1.35-1.55	0.2-6.0	0.06-0.14	5.6-7.8	Low	0.24			
31*:											
Chaires	0-6	2-5	1.10-1.35	6.0-20	0.15-0.20	3.6-5.5	Low	0.10	5	1	10-20
	6-23	0-3	1.45-1.55	6.0-20	0.02-0.05	3.6-5.5	Low	0.10			
	23-46	2-13	1.45-1.60	0.6-2.0	0.15-0.20	3.6-5.5	Low	0.20			
	46-80	15-35	1.60-1.70	0.2-0.6	0.10-0.20	4.5-7.3	Low	0.24			
Meadowbrook	0-7	0-3	1.35-1.65	6.0-20	0.05-0.10	3.6-7.3	Low	0.10	5	1	1-3
	7-45	1-6	1.35-1.65	6.0-20	0.03-0.08	3.6-8.4	Low	0.10			
	45-70	9-20	1.50-1.80	0.2-2.0	0.10-0.15	4.5-8.4	Low	0.15			
	70-80	11-22	1.50-1.80	0.2-2.0	0.10-0.15	4.5-8.4	Low	0.15			
32*:											
Chaires	0-6	2-5	1.10-1.35	6.0-20	0.15-0.20	3.6-5.5	Low	0.10	5	8	1-3
	6-24	0-3	1.35-1.45	6.0-20	0.02-0.05	3.6-6.5	Low	0.10			
	24-52	2-13	1.45-1.60	0.6-2.0	0.05-0.10	3.6-6.5	Low	0.20			
	52-80	15-35	1.60-1.70	0.2-0.6	0.10-0.15	4.5-7.3	Low	0.37			
Meadowbrook	0-4	2-5	1.10-1.35	6.0-20	0.15-0.20	3.6-7.3	Low	0.10	5	8	10-20
	4-42	1-6	1.35-1.65	6.0-20	0.03-0.08	3.6-8.4	Low	0.10			
	42-65	9-20	1.50-1.70	0.2-2.0	0.10-0.15	4.5-8.4	Low	0.15			
	65-80	11-32	1.50-1.65	0.2-2.0	0.10-0.15	4.5-8.4	Low	0.20			

See footnote at end of table.

TABLE 14.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
33*:											
Tooles	0-5	2-5	1.15-1.35	6.0-20	0.05-0.10	4.5-7.3	Low	0.10	4	1	1-4
	5-25	2-5	1.35-1.60	6.0-20	0.05-0.10	4.5-7.3	Low	0.10			
	25-42	20-35	1.40-1.70	0.06-0.2	0.15-0.20	6.6-8.4	Moderate	0.28			
	42	---	---	2.0-20	---	---					
Meadowbrook	0-6	2-5	1.30-1.50	6.0-20	0.05-0.15	4.5-6.5	Low	0.10	5	1	1-4
	6-42	1-5	1.45-1.60	6.0-20	0.05-0.10	4.5-7.8	Low	0.10			
	42-55	18-35	1.50-1.65	0.2-2.0	0.10-0.15	5.6-8.4	Moderate	0.17			
	55	---	---	2.0-20	---	---					
Rawhide	0-10	2-8	1.10-1.35	6.0-20	0.15-0.25	5.6-6.5	Low	0.10	5	8	10-20
	10-45	18-35	1.40-1.60	<0.2	0.10-0.15	6.1-8.4	Low	0.20			
	45-80	3-30	1.45-1.70	2.0-6.0	0.05-0.15	6.1-8.4	Low	0.15			
34	0-6	1-3	1.20-1.45	6.0-20	0.05-0.08	3.6-6.5	Low	0.10	5	1	1-2
Ortega	6-80	1-3	1.35-1.60	6.0-20	0.03-0.06	3.6-6.5	Low	0.10			
36	0-6	2-10	1.40-1.60	2.0-20	0.02-0.10	4.5-7.3	Low	0.10	5	1	1-4
Wampee	6-32	2-15	1.40-1.60	2.0-20	0.02-0.15	4.5-6.5	Low	0.15			
	32-80	10-30	1.30-1.75	0.6-2.0	0.10-0.20	4.5-6.5	Low	0.20			
37*:											
Pantego	0-10	4-10	1.25-1.45	2.0-6.0	0.18-0.28	3.6-5.5	Low	0.15	5	8	10-20
	10-45	18-35	1.30-1.50	0.6-2.0	0.12-0.20	3.6-5.5	Low	0.28			
	45-80	20-40	1.30-1.60	0.6-2.0	0.15-0.20	3.6-5.5	Low	0.28			
Surrency	0-8	2-8	0.80-1.25	6.0-20	0.15-0.30	3.6-5.5	Low	0.10	5	8	10-20
	8-32	<10	1.50-1.65	2.0-20	0.05-0.10	3.6-5.5	Low	0.10			
	32-60	10-23	1.60-1.85	0.6-6.0	0.06-0.10	3.6-5.5	Low	0.15			
	60-80	22-35	1.65-1.85	0.6-2.0	0.10-0.15	3.6-5.5	Low	0.15			
38*:											
Pantego	0-8	5-15	1.20-1.40	0.6-2.0	0.20-0.30	3.6-5.5	Low	0.10	5	8	10-20
	8-19	18-35	1.30-1.50	0.6-2.0	0.12-0.20	3.6-5.5	Low	0.28			
	19-80	20-40	1.30-1.60	0.6-2.0	0.15-0.20	3.6-5.5	Low	0.28			
Surrency	0-6	2-8	0.80-1.25	6.0-20	0.15-0.30	3.6-5.0	Low	0.10	5	8	10-20
	6-32	<10	1.50-1.65	2.0-20	0.05-0.10	3.6-5.0	Low	0.10			
	32-60	10-23	1.60-1.85	0.6-6.0	0.06-0.10	3.6-5.5	Low	0.15			
	60-80	22-35	1.65-1.85	0.6-2.0	0.10-0.15	3.6-5.5	Low	0.15			
39	0-18	3-10	1.45-1.65	2.0-20	0.05-0.07	4.5-5.5	Low	0.10	5	1	1-2
Eunola	18-58	15-40	1.55-1.70	0.2-2.0	0.09-0.12	4.5-5.5	Low	0.24			
	58-80	2-11	1.45-1.75	6.0-20	0.02-0.06	4.5-5.5	Low	0.20			
41*:											
Meadowbrook	0-6	2-5	1.10-1.35	6.0-20	0.15-0.20	3.6-7.3	Low	0.10	5	8	10-20
	6-45	1-6	1.35-1.65	6.0-20	0.03-0.08	3.6-8.4	Low	0.10			
	45-80	11-32	1.50-1.65	0.2-2.0	0.10-0.15	4.5-8.4	Low	0.20			
Harbeson	0-12	3-9	0.80-1.30	2.0-20	0.20-0.25	4.5-7.8	Low	0.10	5	8	9-20
	12-63	3-9	1.50-1.75	6.0-20	0.03-0.10	4.5-7.8	Low	0.10			
	63-80	10-30	1.60-1.85	0.2-2.0	0.10-0.20	5.6-8.4	Moderate	0.17			
42*:											
Sapelo	0-18	2-5	1.40-1.65	6.0-20	0.03-0.10	3.6-5.5	Low	0.10	5	1	1-3
	18-40	3-7	1.35-1.60	0.6-2.0	0.10-0.15	3.6-5.5	Low	0.15			
	40-56	3-6	1.50-1.70	6.0-20	0.03-0.15	3.6-6.7	Low	0.17			
	56-80	10-30	1.55-1.75	0.2-2.0	0.12-0.17	3.6-6.0	Low	0.24			

TABLE 14.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
42*:											
Clara	0-4	0-4	1.40-1.55	6.0-20	0.05-0.10	5.1-8.4	Low	0.10	5	1	1-8
	4-15	1-3	1.40-1.55	6.0-20	0.05-0.10	5.1-8.4	Low	0.10			
	15-80	1-6	1.40-1.65	6.0-20	0.10-0.15	5.1-8.4	Low	0.10			
Surrency	0-7	2-8	0.80-1.25	6.0-20	0.15-0.30	3.6-5.5	Low	0.10	5	8	10-20
	7-32	<10	1.50-1.65	2.0-20	0.05-0.10	3.6-5.5	Low	0.10			
	32-80	10-23	1.60-1.85	0.6-6.0	0.06-0.10	3.6-5.5	Low	0.15			
43*:											
Garcon	0-7	3-8	1.25-1.50	6.0-20	0.10-0.15	4.5-5.5	Low	0.10	5	1	1-3
	7-26	3-8	1.40-1.65	6.0-20	0.05-0.10	4.5-5.5	Low	0.10			
	26-51	12-30	1.55-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.24			
	51-80	3-10	1.50-1.70	6.0-20	0.05-0.08	4.5-5.5	Low	0.10			
Albany	0-63	1-10	1.40-1.55	6.0-20	0.02-0.04	3.6-6.5	Low	0.10	5	1	1-2
	63-80	13-35	1.55-1.65	0.2-2.0	0.10-0.16	4.5-6.0	Low	0.24			
Meadowbrook	0-6	0-3	1.15-1.40	6.0-20	0.05-0.10	3.6-7.3	Low	0.10	5	8	2-4
	6-45	1-6	1.35-1.65	6.0-20	0.03-0.08	3.6-8.4	Low	0.10			
	45-80	11-32	1.50-1.65	0.2-2.0	0.10-0.15	4.5-8.4	Low	0.20			
44*:											
Albany	0-53	1-10	1.40-1.55	6.0-20	0.02-0.04	3.6-6.5	Low	0.10	5	1	1-2
	53-80	13-35	1.55-1.65	0.2-2.0	0.10-0.16	4.5-6.0	Low	0.24			
Ousley	0-4	1-3	1.35-1.45	6.0-20	0.05-0.10	4.5-6.0	Low	0.10	5	1	<.5
	4-80	1-2	1.45-1.60	6.0-20	0.02-0.06	4.5-6.0	Low	0.15			
Meadowbrook	0-6	0-3	1.35-1.65	6.0-20	0.05-0.10	3.6-7.3	Low	0.10	5	8	10-20
	6-45	1-6	1.35-1.65	6.0-20	0.03-0.08	3.6-8.4	Low	0.10			
	45-80	11-22	1.50-1.80	0.2-2.0	0.10-0.15	4.5-8.4	Low	0.15			
45*:											
Wekiva	0-6	2-6	1.30-1.50	6.0-20	0.05-0.15	6.1-7.3	Low	0.10	2	1	2-5
	6-14	1-6	1.45-1.60	6.0-20	0.05-0.10	6.1-7.3	Low	0.10			
	14-26	12-35	1.45-1.65	0.2-0.6	0.10-0.15	6.1-7.3	Low	0.15			
	26	---	---	2.0-20.0	---	---	---	---			
Rawhide	0-8	2-8	1.10-1.35	6.0-20	0.15-0.25	5.6-6.5	Low	0.10	5	8	10-20
	8-68	18-35	1.40-1.60	<0.2	0.10-0.15	6.1-8.4	Low	0.20			
	68-80	3-30	1.45-1.70	2.0-6.0	0.05-0.15	6.1-8.4	Low	0.15			
Tooles	0-6	2-5	1.15-1.35	6.0-20	0.05-0.10	4.5-7.3	Low	0.10	4	1	1-4
	6-32	2-5	1.35-1.60	6.0-20	0.05-0.10	4.5-7.3	Low	0.10			
	32-45	20-35	1.40-1.70	0.06-0.2	0.15-0.20	6.6-8.4	Moderate	0.28			
	45	---	---	2.0-20	---	---	---	---			
46*:											
Tooles	0-8	2-5	1.15-1.35	6.0-20	0.05-0.10	4.5-7.3	Low	0.10	4	1	1-4
	8-28	2-5	1.35-1.60	6.0-20	0.05-0.10	4.5-7.3	Low	0.10			
	28-43	20-35	1.40-1.70	0.06-0.2	0.15-0.20	6.6-8.4	Moderate	0.28			
	43	---	---	2.0-20	---	---	---	---			
Rawhide	0-18	2-8	1.10-1.35	6.0-20	0.15-0.25	5.6-6.5	Low	0.10	5	8	10-20
	18-40	18-35	1.40-1.60	<0.2	0.10-0.15	6.1-8.4	Low	0.20			
	40-80	3-30	1.45-1.70	2.0-6.0	0.05-0.15	6.1-8.4	Low	0.15			

See footnote at end of table.

TABLE 14.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
48*:											
Otela	0-58	2-5	1.45-1.65	6.0-20	0.05-0.10	4.5-6.0	Low	0.10	5	1	.5-2
	58-72	15-32	1.55-1.75	0.2-0.6	0.06-0.15	4.5-8.4	Low	0.24			
	72	---	---	2.0-20	---	---	---	----			
Shadeville	0-8	2-10	1.40-1.60	6.0-20	0.05-0.10	4.5-7.3	Low	0.10	5	1	.5-2
	8-28	2-10	1.45-1.70	6.0-20	0.05-0.10	4.5-7.3	Low	0.10			
	28-55	14-35	1.45-1.70	0.6-2.0	0.10-0.15	4.5-8.4	Low	0.20			
	55	---	---	2.0-20.0	---	---	---	----			
Penney	0-7	0-3	1.30-1.55	6.0-20	0.04-0.09	3.6-6.0	Low	0.10	5	2	0-2
	7-54	0-3	1.35-1.65	6.0-20	0.02-0.07	3.6-6.0	Low	0.10			
	54-80	2-6	1.50-1.65	6.0-20	0.05-0.08	3.6-6.0	Low	0.10			
52	0-25	0-3	1.35-1.45	6.0-20	0.03-0.07	3.6-6.0	Low	0.10	5	1	<3
Mandarin	25-37	2-9	1.45-1.60	0.6-2.0	0.10-0.15	3.6-6.0	Low	0.15			
	37-80	0-3	1.35-1.45	6.0-20	0.03-0.07	3.6-7.3	Low	0.10			
53	0-4	0-3	1.30-1.55	6.0-20	0.04-0.09	3.6-6.0	Low	0.10	5	1	0-2
Penney	4-55	0-3	1.35-1.65	6.0-20	0.02-0.07	3.6-6.0	Low	0.10			
	55-80	2-6	1.50-1.65	6.0-20	0.05-0.08	3.6-6.0	Low	0.10			
54*:											
Garcon	0-6	3-8	1.25-1.50	6.0-20	0.10-0.15	4.5-5.5	Low	0.10	5	1	1-3
	6-23	3-8	1.40-1.65	6.0-20	0.05-0.10	4.5-5.5	Low	0.10			
	23-58	12-30	1.55-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.24			
	58-80	3-10	1.50-1.70	6.0-20	0.05-0.08	4.5-5.5	Low	0.10			
Eunola	0-15	3-11	1.45-1.70	2.0-6.0	0.06-0.11	4.5-5.5	Low	0.15	5	1	.5-2
	15-39	18-35	1.35-1.65	0.6-2.0	0.12-0.17	4.5-5.5	Low	0.28			
	39-55	8-25	1.35-1.65	2.0-6.0	0.10-0.16	4.5-5.5	Low	0.24			
	55-80	2-11	1.45-1.75	6.0-20	0.02-0.06	4.5-5.5	Low	0.20			

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--SOIL AND WATER FEATURES

("Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Hydrologic group	Flooding		High water table		Depth to bedrock	Subsidence		Risk of corrosion	
		Frequency	Duration	Depth	Kind		Initial	Total	Uncoated steel	Concrete
				Ft		In	In	In		
2---- Penney	A	None	---	>6.0	---	>60	---	---	Low	High.
4*:										
Blanton	A	None	---	4.0-6.0	Perched	>60	---	---	High	High.
Ortega	A	None	---	3.5-5.0	Apparent	>60	---	---	Low	High.
5*:										
Otela	A	None	---	4.0-6.0	Perched	>60	---	---	Low	Low.
Penney	A	None	---	>6.0	---	>60	---	---	Low	High.
6*:										
Oaky	D	None	---	0.5-1.5	Apparent	>-60	---	---	High	Moderate.
Rawhide	D	None	---	+2-0	Apparent	>60	---	---	High	High.
7*:										
Chaires	B/D	None	---	0.5-1.5	Apparent	>60	---	---	High	High.
Chaires	D	None	---	+2-0	Apparent	>60	---	---	Moderate	High.
9*:										
Sapelo	B/D	None	---	0.5-1.5	Apparent	>60	---	---	High	High.
Chaires	D	None	---	+2-0	Apparent	>60	---	---	Moderate	High.
10*:										
Pamlico	D	Frequent	Brief to long.	+1-0.5	Apparent	>60	4-12	10-29	High	High.
Dorovan	D	Frequent	Very long	+1-0.5	Apparent	>60	6-12	51-80	High	High.
11*:										
Pamlico	D	None	---	+2-0	Apparent	>60	4-20	10-36	High	High.
Dorovan	D	None	---	+2-0	Apparent	>60	6-12	51-80	High	High.
13*:										
Meadowbrook	B/D	None	---	0-1.0	Apparent	>60	---	---	Moderate	High.
Chaires	B/D	None	---	0.5-1.5	Apparent	>60	---	---	High	High.
14---- Leon	B/D	None	---	0.5-1.5	Apparent	>60	---	---	High	High.
15*:										
Wesconnett	D	None	---	+2-0	Apparent	>60	---	---	Moderate	High.
Lynn Haven	D	None	---	+2-0	Apparent	>60	---	---	Moderate	High.
16---- Tooles	B/D	None	---	0.5-1.0	Apparent	40-60	---	---	High	Moderate.

See footnote at end of table.

TABLE 15.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding		High water table		Depth to bedrock	Subsidence		Risk of corrosion	
		Frequency	Duration	Depth	Kind		Initial	Total	Uncoated steel	Concrete
				Ft		In	In	In		
18*:										
Surrency	D	None	---	+2-0	Apparent	>60	---	---	High	High.
Plummer	D	None	---	+2-0	Apparent	>60	---	---	Moderate	High.
Clara	D	None	---	+2-0	Apparent	>60	---	---	High	Moderate.
20--Plummer	B/D	None	---	0.5-1.5	Apparent	>60	---	---	Moderate	High.
24*:										
Rawhide	D	None	---	+2-0	Apparent	>60	---	---	High	High.
Harbeson	D	None	---	+2-0	Apparent	>72	0-2	2-6	Moderate	High.
26*:										
Ridgewood	C	None	---	2.0-3.5	Apparent	>60	---	---	Low	High.
Hurricane	C	None	---	2.0-3.5	Apparent	>60	---	---	Low	Moderate.
27*:										
Albany	C	None	---	1.0-2.5	Apparent	>60	---	---	High	High.
Ridgewood	C	None	---	2.0-3.5	Apparent	>60	---	---	Low	High.
28*:										
Clara	D	Frequent	Brief	0-0.5	Apparent	>60	---	---	High	Moderate.
Meadowbrook	D	Frequent	Very long	+2-0	Apparent	>60	---	---	Moderate	High.
29--Fluvaquents	D	Frequent	Long to very long	0-0.5	Apparent	>60	---	---	High	Moderate.
31*:										
Chaires	D	None	---	0-0.5	Apparent	>60	---	---	High	High.
Meadowbrook	D	None	---	0-0.5	Apparent	>60	---	---	Moderate	High.
32*:										
Chaires	D	None	---	+2-0	Apparent	>60	---	---	Moderate	High.
Meadowbrook	D	None	---	+2-0	Apparent	>60	---	---	Moderate	High.
33*:										
Tooles	D	Frequent	Brief	0-0.5	Apparent	40-60	---	---	High	Moderate.
Meadowbrook	D	Frequent	Brief	0-0.5	Apparent	55-80	---	---	High	Low.
Rawhide	D	Frequent	Long	+2-0	Apparent	>60	---	---	High	High.
34--Ortega	A	None	---	4.0-5.0	Apparent	>60	---	---	Low	High.
36--Wampee	C	None	---	1.0-3.0	Apparent	>60	---	---	High	Moderate.
37*:										
Pantego	D	None	---	+2-0	Apparent	>60	---	---	High	High.
Surrency	D	None	---	+2-0	Apparent	>60	---	---	High	High.

See footnote at end of table.

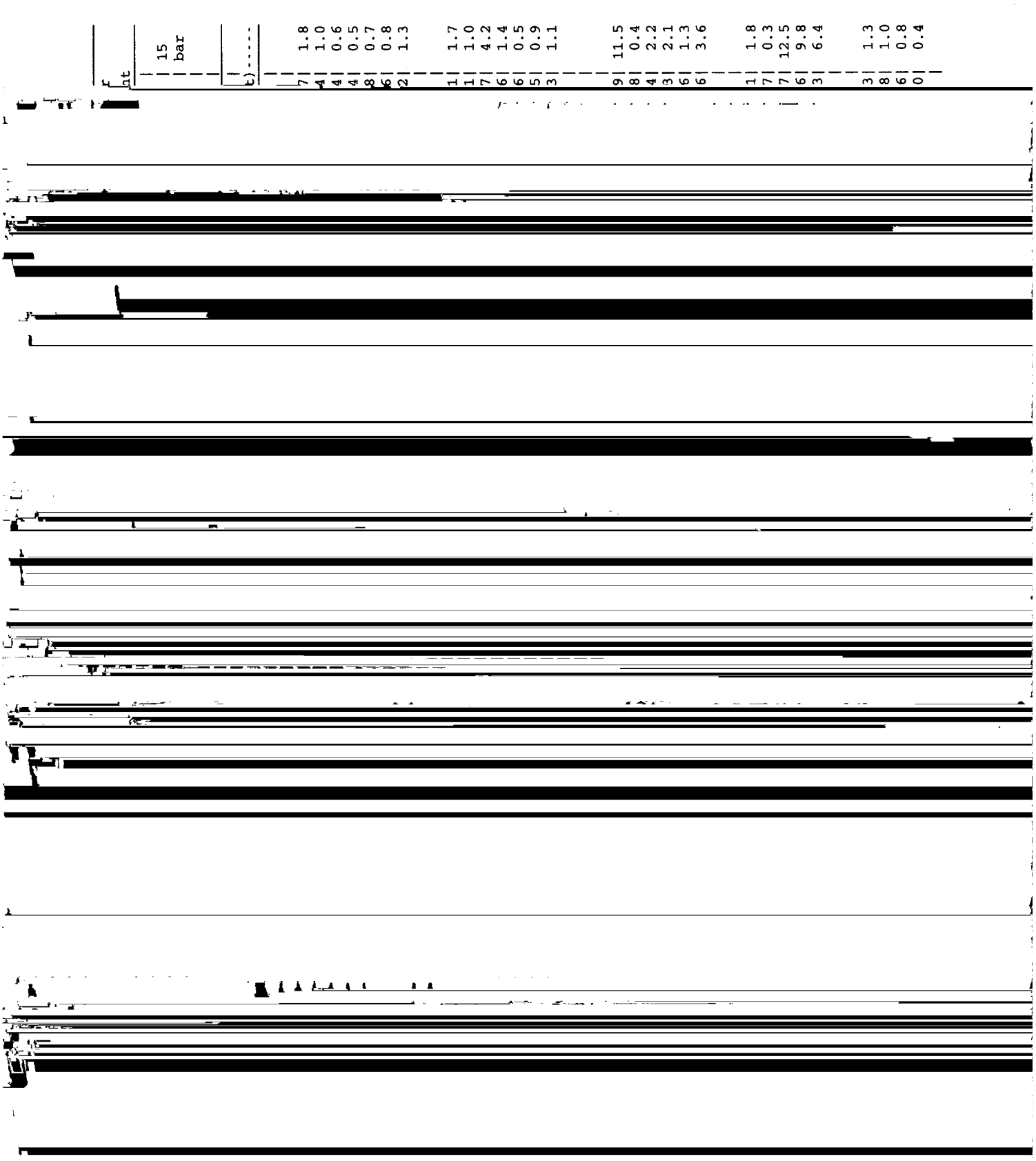
TABLE 15.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Subsidence	Risk of corrosion	
		Frequency	Duration	Depth	Kind	Depth to bedrock	Initial	Total	Uncoated steel	Concrete
				Ft		In	In	In		
38*:										
Pantego	D	Frequent	Long	0-0.5	Apparent	>60	---	---	High	High.
Surrency	D	Frequent	Long	0-0.5	Apparent	>60	---	---	High	High.
39 Eunola	C	None	---	1.0-2.5	Apparent	>60	---	---	High	Moderate.
41*:										
Meadowbrook	D	None	---	+2-0	Apparent	>60	---	---	Moderate	High.
Harbeson	D	None	---	+2-0	Apparent	>72	0-2	2-6	Moderate	High.
42*:										
Sapelo	D	None	---	0-0.5	Apparent	>60	---	---	High	High.
Clara	B/D	None	---	0-0.5	Apparent	>60	---	---	High	Moderate.
Surrency	D	None	---	+2-0	Apparent	>60	---	---	High	High.
43*:										
Garcon	C	Occasional	Brief	1.5-3.0	Apparent	>60	---	---	High	High.
Albany	C	Occasional	Brief	1.0-2.5	Apparent	>60	---	---	High	High.
Meadowbrook	D	Occasional	Long	+2-0	Apparent	>60	---	---	Moderate	High.
44*:										
Albany	C	Occasional	Brief	1.0-2.5	Apparent	>60	---	---	High	High.
Ousley	C	Occasional	Brief	1.5-3.0	Apparent	>60	---	---	Low	High.
Meadowbrook	D	Occasional	Brief to long.	+2-0	Apparent	>60	---	---	Moderate	High.
45*:										
Wekiva	D	Occasional	Brief	0-1.0	Apparent	10-30	---	---	High	Low.
Rawhide	D	Occasional	Long	+2-0	Apparent	>60	---	---	High	High.
Tooles	D	Occasional	Brief	0-0.5	Apparent	40-60	---	---	High	Moderate

TABLE 15.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding		High water table		Depth to bedrock	Subsidence		Risk of corrosion	
		Frequency	Duration	Depth	Kind		Initial	Total	Uncoated steel	Concrete
				Ft		In	In	In		
54*:										
Garcon	C	Occasional	Brief	1.5-3.0	Apparent	>60	---	---	High	High.
Eunola	C	Occasional	Brief	1.5-2.5	Apparent	>60	---	---	Low	High.

* See description of the map unit for composition and behavior characteristics of the map unit.


f
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15
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1.8
1.0
0.6
0.5
0.7
0.8
1.3
1.7
1.0
4.2
1.4
0.5
0.9
1.1
11.5
0.4
2.2
2.1
1.3
3.6
1.8
0.3
12.5
9.8
6.4
1.3
1.0
0.8
0.4

TABLE 16.--PHYSICAL ANALYSES OF SELECTED SOILS--Continued

Soil name and sample number	Depth	Horizon	Particle-size distribution: Sand: Very coarse (2-1 mm)	Sand: Coarse (1-0.5 mm)	Sand: Medium (0.5-0.25 mm)	Sand: Fine (0.25-0.1 mm)	Sand: Very fine (0.1-0.05 mm)	Sand: Total (2-0.05 mm)	Silt (0.05-0.002 mm)	Clay (<0.002 mm)	Hydraulic conductivity	Bulk density (field moist)	Water content: 1/10 bar	Water content: 1/3 bar	Water content: 15 bar
	In		Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Cm/hr	g/cm^3	Pct (wt)	Pct (wt)	Pct (wt)
Penney sand:															
S90FL-67-014-1	0-7	Ap	1.3	8.9	23.8	47.0	13.1	94.1	4.6	2.3	63.8	1.39	7.8	4.5	1.5
-2	7-24	E1	1.2	7.8	21.6	49.6	14.5	94.7	2.6	2.7	30.3	1.59	5.6	3.2	1.2
-3	24-55	E2	1.5	8.0	22.1	49.9	14.4	95.9	1.8	2.3	43.4	1.55	4.1	2.1	1.0
-4	55-80	E/Bt	1.5	7.6	20.0	51.5	15.9	96.5	0.7	2.8	42.1	1.52	3.5	1.5	0.5
Plummer fine sand:															
S90FL-67-013-1	0-7	Ap	0.2	3.0	14.6	60.3	16.1	94.2	4.4	1.4	24.3	1.33	12.3	7.5	2.5
-2	7-14	A2	0.3	2.7	12.4	60.7	17.1	93.2	4.5	2.3	17.1	1.54	12.1	7.6	1.6
-3	14-22	Eg1	0.3	2.7	11.5	63.4	17.1	95.0	3.1	1.9	12.7	1.63	7.7	4.0	0.8
-4	22-55	Eg2	0.3	3.3	11.8	61.6	19.2	96.2	3.1	0.7	14.0	1.67	6.2	2.7	0.4
-5	55-80	Btg	0.3	2.5	10.2	51.3	14.5	78.8	5.8	15.4	0.3	1.79	14.5	11.6	5.1
Ridgewood fine sand:															
S89FL-67-008-1	0-6	Ap	0.1	2.2	12.2	62.0	17.9	94.4	2.5	3.1	23.7	1.23	13.6	8.6	3.0
-2	6-18	C1	0.1	1.9	11.1	64.9	17.3	95.3	3.0	1.7	21.1	1.40	9.5	5.3	1.3
-3	18-39	C2	0.1	1.7	9.8	64.6	18.8	95.0	2.7	2.3	34.9	1.48	5.9	3.0	0.8
-4	39-80	C3	0.1	2.4	10.9	67.0	17.1	97.4	1.4	0.8	13.1	1.63	4.2	1.8	0.3
Sapelo fine sand:															
S89FL-67-007-1	0-6	Ap	0.1	2.1	12.2	60.0	22.0	96.5	2.8	0.8	47.3	1.26	12.4	7.3	2.6
-2	6-13	E1	0.2	2.5	13.1	58.1	21.0	94.9	4.3	0.8	23.4	1.46	8.5	4.4	1.4
-3	13-28	E2	0.2	2.4	10.9	61.1	22.6	97.2	2.5	0.3	21.1	1.52	4.4	1.9	0.6
-4	28-34	Bh1	0.2	2.8	11.2	55.2	21.3	90.7	4.7	4.6	31.2	1.54	14.0	8.4	2.2
-5	34-45	Bh2	0.2	1.8	9.9	60.5	23.0	95.4	2.9	1.7	28.0	1.57	10.5	6.2	1.5
-6	45-60	E'1	0.2	2.7	10.7	58.8	23.1	95.5	2.7	1.8	8.9	1.66	6.6	3.2	0.6
-7	60-73	Btg	0.2	1.8	8.6	38.6	24.8	74.0	3.3	22.7	0.5	1.73	16.7	13.9	7.8
-8	73-80	BCg	0.1	1.8	12.3	53.0	14.5	81.7	2.8	15.5	0.2	1.76	15.9	10.9	5.9
Wampee fine sand:															
S90FL-67-012-1	0-6	Ap	0.9	5.7	21.7	51.8	12.9	93.0	5.8	1.2	24.7	1.56	8.3	4.9	1.0
-2	6-12	E1	0.8	5.0	19.3	50.7	13.8	89.6	6.8	3.6	26.7	1.57	11.0	6.9	1.9
-3	12-21	E2	0.9	5.4	18.5	51.1	13.8	89.7	7.2	3.1	17.1	1.56	10.3	6.2	1.8
-4	21-32	E3	1.4	6.6	19.0	49.0	14.3	90.3	5.9	3.8	10.5	1.63	9.0	5.1	1.4
-5	32-55	Btg1	0.4	3.6	19.4	34.0	7.2	64.6	6.0	29.4	0.8	1.63	20.8	17.5	9.4
-6	55-80	Btg2	0.4	3.4	19.6	35.4	7.0	65.8	4.8	29.4	0.2	1.74	19.4	16.3	10.4

TABLE 17.--CHEMICAL ANALYSES OF SELECTED SOILS

Soil name and sample number*	Depth	Horizon	Extractable bases: Ca	Mg	Na	K	Sum	Extractable acidity	Sum of cations	Base saturation	Organic carbon	Electrical conductivity	pH: H_2O (1:1)	$CaCl_2$ 0.01M (1:2)	KCl 1N (1:1)	Pyrophosphate extractable: C	Fe	Al	Citrate-dithionite extractable: Fe	Al
	In		----Milliequivalents/100 grams of soil-----							Pct	Pct	Mmhos/cm				Pct	Pct	Pct	Pct	Pct
Hurricane fine sand:																				
S89FL-67-006-1	0-5	Ap	0.25	0.08	0.02	0.03	0.38	10.29	10.67	4	1.08	0.05	6.6	5.0	5.7	---	---	---	---	---
-2	5-16	E1	0.09	0.03	0.01	0.02	0.15	7.28	7.43	2	0.77	0.02	6.7	5.1	5.8	---	---	---	---	---
-3	16-25	E2	0.04	0.03	0.01	0.02	0.10	4.37	4.47	2	0.44	0.02	6.8	5.1	5.9	---	---	---	---	---
-4	25-50	E3	0.02	0.02	0.01	0.01	0.06	1.31	1.36	4	0.16	0.02	6.5	5.1	6.0	---	---	---	---	---
-5	50-54	Bh1	0.02	0.02	0.00	0.00	0.04	30.69	30.73	0	0.47	0.01	6.2	4.9	5.9	---	---	---	---	---
-6	54-65	Bh2	0.04	0.02	0.00	0.00	0.06	6.49	6.55	1	0.35	0.01	6.0	4.9	5.8	0.45	0.00	0.18	0.03	0.12
-7	65-80	Bh3	0.05	0.03	0.00	0.00	0.08	11.03	11.11	1	0.69	0.44	6.0	4.8	5.6	0.67	0.00	0.31	0.04	0.21
Leon fine sand:																				
S89FL-67-003-1	0-4	Ap	0.22	0.30	0.03	0.02	0.57	8.14	8.71	7	1.52	0.08	4.0	3.1	2.6	---	---	---	---	---
-2	4-10	E	0.06	0.07	0.02	0.01	0.16	1.05	1.21	13	0.50	0.04	4.6	3.5	3.1	---	---	---	---	---
-3	10-17	Bh	0.05	0.09	0.03	0.01	0.18	25.98	26.16	1	2.21	0.04	4.6	3.8	3.2	1.86	0.02	0.31	0.05	0.29
-4	17-24	BE	0.04	0.03	0.02	0.01	0.10	8.41	8.51	1	0.63	0.02	5.2	4.4	4.1	---	---	---	---	---
-5	24-44	E'1	0.02	0.01	0.01	0.00	0.04	2.27	2.31	2	0.16	0.07	5.3	4.7	4.4	---	---	---	---	---
-6	44-63	E'2	0.02	0.01	0.01	0.00	0.04	3.21	3.25	1	0.21	0.03	5.3	4.6	4.4	---	---	---	---	---
-7	63-80	B'h	0.04	0.02	0.02	0.00	0.08	11.82	11.90	1	1.05	0.16	5.1	4.4	4.1	0.75	0.00	0.20	0.03	0.18
Lynn Haven muck fine sand:																				
S89FL-67-004-1	0-13	Ap	0.44	0.82	0.21	0.22	1.69	42.04	43.73	4	6.40	0.09	3.9	2.9	2.3	---	---	---	---	---
-2	13-19	E	0.02	0.02	0.01	0.00	0.05	0.85	0.90	6	0.23	0.18	4.8	3.8	3.3	---	---	---	---	---
-3	19-27	Bh	0.03	0.10	0.05	0.01	0.19	18.24	18.43	1	1.71	0.19	4.3	3.2	2.8	1.36	0.00	0.12	0.04	0.10
-4	27-34	Bw1	0.02	0.02	0.04	0.01	0.09	7.12	7.21	1	0.72	0.11	5.2	4.2	3.5	---	---	---	---	---
-5	34-52	Bw2	0.02	0.02	0.02	0.00	0.06	5.38	5.44	1	0.27	0.05	5.1	4.3	3.8	---	---	---	---	---
-6	52-80	B'h	0.11	0.05	0.03	0.01	0.20	10.64	10.84	2	0.81	0.02	5.0	4.5	4.3	0.35	0.00	0.22	0.02	0.21
Oaky fine sand:																				
S89FL-67-005-1	0-6	Ap	0.75	0.21	0.02	0.03	1.01	5.08	6.09	17	0.79	0.04	4.7	3.8	3.4	---	---	---	---	---
-2	6-13	E	0.17	0.06	0.00	0.00	0.23	1.85	2.08	11	0.24	0.02	5.0	4.3	3.9	---	---	---	---	---
-3	13-40	Btg1	19.25	2.39	0.09	0.05	21.89	4.93	26.82	82	0.27	0.09	6.4	5.9	5.9	---	---	---	---	---
-4	40-51	Btg2	26.88	2.84	0.08	0.04	29.84	5.67	35.50	84	0.10	0.17	7.3	6.4	6.5	---	---	---	0.85	0.15
-5	51-80	Btg3	30.75	2.80	0.07	0.03	33.65	5.79	39.44	85	0.02	0.17	7.7	6.6	7.2	---	---	---	0.83	0.07
																			0.53	0.04
Ortega fine sand:																				
S89FL-67-015-1	0-6	Ap	3.90	0.49	0.01	0.10	4.50	4.52	9.02	50	0.73	0.02	5.8	5.4	5.2	---	---	---	---	---
-2	6-31	C1	0.18	0.04	0.00	0.01	0.23	3.55	3.78	11	0.33	0.03	5.9	5.3	4.7	---	---	---	---	---
-3	31-52	C2	0.17	0.04	0.00	0.02	0.23	1.88	2.11	11	0.12	0.02	5.9	5.3	4.7	---	---	---	---	---
-4	52-80	C3	0.13	0.03	0.00	0.01	0.17	0.90	1.07	16	0.05	0.01	5.9	5.3	4.8	---	---	---	---	---

* See footnote at end of table.

O	pH		Pyrophosphate extractable			Citrate-dithionite extractable	
:	CaCl2 0.01M (1:2)	KCl 1N (1:1)	C	Fe	Al	Fe	Al
)			Pct	Pct	Pct	Pct	Pct
6	4.9	4.3	---	---	---	---	---
6	5.1	4.5	---	---	---	---	---
6	5.1	4.5	---	---	---	---	---
6	5.1	4.6	---	---	---	---	---
8	4.2	3.3	---	---	---	---	---
0	4.7	3.9	---	---	---	---	---
2	5.0	4.6	---	---	---	---	---
5	5.2	4.7	---	---	---	---	---
4	4.7	4.3	---	---	---	0.56	0.14
4	4.3	3.6	---	---	---	---	---
7	4.8	4.2	---	---	---	---	---
5	4.8	4.4	---	---	---	---	---
5	5.0	4.7	---	---	---	---	---
3	3.4	3.4	---	---	---	---	---
3	3.4	2.9	---	---	---	---	---
5	4.2	3.8	---	---	---	---	---
7	3.8	3.3	0.75	0.00	0.15	0.04	0.10
3	4.6	3.8	---	---	---	---	---
7	4.7	4.4	---	---	---	---	---
5	4.2	4.1	---	---	---	0.05	0.11
6	4.4	4.1	---	---	---	---	---
6	4.7	3.6	---	---	---	---	---
3	5.0	4.1	---	---	---	---	---
4	5.1	4.3	---	---	---	---	---
4	5.0	4.3	---	---	---	---	---
5	4.5	3.6	---	---	---	0.35	0.12
5	4.6	3.8	---	---	---	---	---

of the sample site, see the series

TABLE 18.--CLAY MINERALOGY OF SELECTED SOILS

Soil name and sample number*	Depth	Horizon	Clay minerals: Montmorillonite	14-angstrom intergrade	Kaolinite	Quartz
	In		Pct	Pct	Pct	Pct
Hurricane fine sand:						
S89FL-67-006-1	0-5	Ap	0	49	16	35
-6	54-65	Bh2	0	13	11	76
-7	65-80	Bh3	0	18	25	57
Leon fine sand:						
S89FL-67-003-1	0-4	Ap	0	0	14	86
-3	10-17	Bh	0	29	12	59
-7	63-80	B'h	0	11	10	79
Lynn Haven mucky fine sand:						
S89FL-67-004-1	0-13	Ap	21	0	10	69
-3	19-27	Bh	22	27	17	34
-6	52-80	B'h	0	24	15	61
Oaky fine sand:						
S89FL-67-005-1	0-6	Ap	31	14	15	40
-3	13-40	Btg1	70	15	10	5
-5	51-80	Btg3	37	6	4	3
Ortega fine sand:						
S89FL-67-015-1	0-6	Ap		37	21	43
-3	31-52	C2		40	16	44
Penney sand:						
S90FL-67-014-1	0-7	Ap		34	33	33
-4	55-80	E/Bt		38	42	20
Plummer fine sand:						
S90FL-67-013-1	0-7	Ap	4	26	20	50
-5	55-80	Btg	26	28	31	15
Ridgewood fine sand:						
S89FL-67-008-1	0-6	Ap	0	51	24	25
-4	39-80	C3	0	46	33	21
Sapelo fine sand:						
S89FL-67-007-1	0-6	Ap	0	0	20	80
-4	28-34	Bh1	0	36	30	34
-7	60-73	Btg	0	24	69	7
-8	73-80	BCg	0	22	71	7
Wampee fine sand:						
S90FL-67-012-1	0-6	Ap	26	19	17	38
-5	32-55	Btg1	37	14	42	7
-6	55-80	Btg2	42	13	36	9

* All of the soils are the typical pedon for the series in this survey area. For the location of the sample site, see the series description in the section "Soil Series and Their Morphology."

TABLE 19.--ENGINEERING INDEX TEST DATA

(Tests were performed by the Florida Department of Transportation (FDOT) in cooperation with the U.S. Bureau of Public Roads, in accordance with standard procedures of the American Association of State Highway and Transportation Officials (AASHTO). See the section "Soil Series and Their Morphology" for location of pedons sampled. NP means nonplastic)

Soil name, report number, horizon, and depth in inches	Classification		Mechanical analysis*								Liquid limit	Plasticity index	Moisture density**	
			Percentage passing sieve--				Percentage smaller than--						Maximum dry density	Optimum moisture
	AASHTO	Unified	No. 4	No. 10	No. 40	No. 200	.05 mm	.02 mm	.005 mm	.002 mm				
											Pct		Lb/cu ft	Pct
Leon fine sand: (S89FL-67-003) E'2 ------ 24-44	A-3(0)	SP-SM	100	100	93	6	5	4	2	1	---	NP	105.5	11.0
Lynn Haven mucky fine sand: (S89FL-67-004) E'1 ------ 45-60	A-3(0)	SP-SM	100	100	98	10	8	6	5	2	---	NP	109.1	10.3
Oaky fine sand: (S89FL-67-005) Btg1 ----- 13-40	A-6(1)	SC	100	100	94	36	33	32	30	28	34	17	103.9	16.9
Hurricane fine sand: (S89FL-67-006) E3 ------- 25-50	A-3(0)	SP-SM	100	100	96	7	6	4	2	1	---	NP	107.9	12.3
Sapelo fine sand: (S89FL-67-007) E' ------- 45-60	A-2-4(0)	SP-SM	100	100	96	12	8	3	2	1	---	NP	107.8	11.8
Ridgewood fine sand: (S89FL-67-008) C3 ------- 39-80	A-3(0)	SP-SM	100	100	96	8	5	3	2	2	---	NP	104.3	12.7
Wampee fine sand: (S90FL-67-012) Btg1 ----- 32-55	A-6(2)	SC	100	100	93	39	36	33	33	32	30	19	110.8	16.4
Plummer fine sand: (S90FL-67-013) Btg ------ 55-80	A-2-4(0)	SM	---	96	91	24	21	18	15	15	---	NP	118.3	12.3
Penney fine sand: (S90FL-67-014) E/Bt ----- 45-80	A-3(0)	SP-SM	100	100	87	6	2	1	0	0	---	NP	109.8	11.8
Ortega fine sand: (S90FL-67-015) C2 ------- 31-52	A-3(0)	SP-SM	100	100	93	7	6	4	3	2	---	NP	110.0	12.1

TABLE 20.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Albany	Loamy, siliceous, thermic Grossarenic Paleudults
Blanton	Loamy, siliceous, thermic Grossarenic Paleudults
Chaires	Sandy, siliceous, thermic Alfic Haplaquods
Clara	Siliceous, thermic Spodic Psammaquents
Dorovan	Dysic, thermic Typic Medisaprists
Eunola	Loamy, siliceous, thermic Aquic Arenic Paleudults
Fluvaquents	Fluvaquents
Garcon	Loamy, siliceous, thermic Arenic Hapludults
Harbeson	Loamy, siliceous, thermic Grossarenic Umbraqualfs
Hurricane	Sandy, siliceous, thermic Grossarenic Entic Haplohumods
Leon	Sandy, siliceous, thermic Aeric Haplaquods
Lynn Haven	Sandy, siliceous, thermic Typic Haplaquods
Mandarin	Sandy, siliceous, thermic Typic Haplohumods
Meadowbrook	Loamy, siliceous, thermic Grossarenic Ochraqualfs
Oaky	Fine-loamy, siliceous, thermic Mollic Albaqualfs
Ortega	Thermic, uncoated Typic Quartzipsamments
Otela	Loamy, siliceous, thermic Grossarenic Paleudalfs
Ousley	Thermic, uncoated Aquic Quartzipsamments
Pamlico	Sandy or sandy-skeletal, siliceous, dysic, thermic Terric Medisaprists
Pantego	Fine-loamy, siliceous, thermic Umbric Paleaquults
Penney	Thermic, uncoated Typic Quartzipsamments
Plummer	Loamy, siliceous, thermic Grossarenic Paleaquults
Rawhide	Fine-loamy, siliceous, thermic Typic Argiaquolls
Ridgewood	Thermic, uncoated Aquic Quartzipsamments
Sapelo	Sandy, siliceous, thermic Ultic Haplaquods
Shadeville	Loamy, siliceous, thermic Arenic Hapludalfs
Surrency	Loamy, siliceous, thermic Arenic Umbric Paleaquults
Tooles	Loamy, siliceous, thermic Arenic Albaqualfs
Wampee	Loamy, siliceous, thermic Aquic Arenic Hapludalfs
Wekiva	Loamy, siliceous, thermic, shallow Aeric Ochraqualfs
Wesconnett	Sandy, siliceous, thermic Typic Haplaquods

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